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By Colonel Fred H. Sargent

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INFANTRY JOURNAL

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The Penalty of Leadership[1]

IN EVERY field of human endeavor, he that is first must perpetually live in the white light of publicity. Whether the leadership be vested in a man or in a manufactured product, emulation and envy are ever at work. In art, in literature, in music, in industry, the reward and the punishment are always the same. The reward is widespread recognition; the punishment, fierce denial and detraction. When a man's work becomes a standard for the whole world, it also becomes a target for the shafts of the envious few. If his work be merely mediocre, he will be left severely alone—if he achieve a masterpiece, it will set a million tongues a-wagging. Jealousy does not protrude its forked tongue at the artist who produces a commonplace painting. Whatsoever you write, or paint, or play, or sing, or build, no one will strive to surpass or to slander you, unless your work be stamped with the seal of genius. Long, long after a great work or a good work has been done, those who are disappointed or envious continue to cry out that it cannot be done. Spiteful little voices in the domain of art were raised against our own Whistler as a mountebank, long after the big world had acclaimed him its greatest artistic genius. Multitudes flocked to Bayreuth to worship at the musical shrine of Wagner, while the little group of those whom he had dethroned and displaced argued angrily that he was no musician at all. The little world continued to protest that Fulton could never build a steamboat, while the big world flocked to the river banks to see his boat steam by. The leader is assailed because he is a leader, and the effort to equal him is merely added proof of that leadership. Failing to equal or to excel, the follower seeks to depreciate and to destroy, but only confirms once more the superiority of that which he strives to supplant. There is nothing new in this. It is as old as the world and as old as the human passions—envy, fear, greed, ambition, and the desire to surpass. And it all avails nothing. If the leader truly leads, he remains—the leader. Master-poet, master-painter, master-workman—each in his turn is assailed, and each holds his laurels through the ages. That which is good or great makes itself known, no matter how loud the clamor of denial. That which deserves to live—lives.

[1] Published originally and copyrighted, 1914, by Cadillac Motor Car Co.

War Record of Leavenworth Graduates

OF MORE than passing interest appears a comparison of the accomplishments during the war of graduates of the General Service Schools, Fort Leavenworth, Kansas, with their student records of attainment as indicated by the marks and recommendations received by them from the school authorities. With such a comparison in view, pertinent extracts from the official records of each graduate since the year 1903 who was on the active list, or recalled to active duty during the war, were recently compiled. It is needless to say the compilation was voluminous. No attempt will be made to reproduce it but merely to summarize the comment briefly on some of the more important phases of the subject.

The changes in the designation from time to time of the Leavenworth Schools may lead to confusion. The present School of the Line is, as we know, an outgrowth of the old Infantry and Cavalry School, which became known during 1901 as the General Service and Staff College; some three years later as the Infantry and Cavalry School; then from 1904 to 1907 as the Army School of the Line; and finally, on September 25, 1919, its current designation appeared in War Department orders. As to the present General Staff School, its designation has also been changed several times. It had its inception during 1904 as the Staff School, which name was changed during 1907 to the Army Staff School. It received its present designation during 1919. The two schools are referred to in the following paragraphs as the School of the Line and the General Staff School.

In each of the classes at the School of the Line from 1903 to the closing of the school during the war, a fixed and very limited number (usually five) of the students, from the head of the class down in order of merit, were termed "Honor Graduates," or the procedure was followed of giving that designation to those students who attained a general average of 97 per cent or better, without limitation as to number. In a similar manner, "Distinguished Graduates" were selected from the head of the class down (exclusive of the Honor men), the general average being lowered to 95 per cent. Usually, also, student officers, by virtue of being recommended for advancement to the General Staff School, were designated as "Distinguished Graduates"; in fact, for a considerable period it was specifically provided in War Department orders that this procedure would be followed, irrespective of the general average attained by such students. All other students were designated "Graduates," provided they attained a general average of at least 75 per cent. At present it is provided that 10 per cent from the head of the class down shall be termed "Honor Graduates"; 15 per cent, beginning with the student next below the Honor men, "Distinguished Graduates"; and the remainder, whose work has reached the required standard, "Graduates." Under present regulations it is not intended that all officers who are designated to take the course at the General Staff School shall have attained the designation "Honor Graduate" or "Distinguished Graduate."

As the classification of graduates as "Superior," "Above average," "Aver-

age," "Below average," and "Inferior" has been carefully made up since the World War, based to a large extent upon the officers' war records, it may be taken as the best available ready means of arriving at a concrete measure of the officer's efficiency or inefficiency in the performance of his duties, and gives a basis for comparison with his work at the General Service Schools.

Honor Graduates.—Under keen competition with other selected students, these officers successfully demonstrated theoretically that they possessed ability of a high order. The lowest general average received by any of them was 92.64 per cent, the highest, 98.29 per cent. The Government had a right to expect them to perform their duties in peace and war in a superior manner, at least to do better than the average officer. Approximately 86 per cent are now classified as superior or above average, 8 per cent as average, and 6 per cent below average. It may be stated therefore that 86 per cent of the "Honor Graduates" measured up to expectations and that 14 per cent did not do so; also, that 6 per cent have proved to be failures.

Distinguished Graduates.—The Government might also reasonably expect above average service from the "Distinguished Graduates." The percentages given them by the school authorities on graduation was only slightly lower as a rule than in the case of the "Honor Graduates." In some cases a "Distinguished Graduate" of one year's class has received a higher rating than some of the Honor men of the classes of other years. Approximately 72 per cent of the "Distinguished Graduates" are now classified as superior or above average, 25 per cent as average, 2 per cent as below average, and 1 per cent inferior. Roughly, the estimate by the school authorities of the officers' abilities was correct three times out of four, provided it be considered that the "Distinguished Graduate" should perform his duties more satisfactorily than the average officer.

Graduates.—More than half of the officers considered, who have attended the School of the Line, fall within this group. In some cases a "Graduate" of one class has received a higher general average than a "Distinguished Graduate," or even an "Honor Graduate" of some other class. None have received a lower general rating than 75 per cent. Some have been permitted to attend the General Staff School; others have been barred therefrom. If the estimates of these officers by the school authorities are correct, all of them should be capable of performing their duties in a manner equal to or better than the average officer. Approximately 4 per cent are now classified as superior, 41 per cent above average, 45 per cent average, 9 per cent below average, and 1 per cent inferior. In nine cases out of ten the records indicate that the "Graduate" has performed his duties in a manner equal to or better than the average officer. In other words, 90 per cent of the "Graduates" have measured up to the school authorities' expectations.

The following table will be of interest. Under (*A*) thereof is a summary of the data with reference to pre-war graduates since the year 1903 of the School of the Line, while under (*B*) is indicated similar information concerning graduates of classes since the war. The classifications as shown in columns 7, 8, and 9 are the best criterions of the war-time accomplishments of both

groups, and columns 3 to 6 (inclusive) show the nature of the duties performed:

"Honor Graduates," "Distinguished Graduates," and "Graduates" during the war:

1	2	3	4	5	6	7	8	9	
	Number of	High command, per cent	Command, per cent	G. S. duty, per cent	Admin. tech. and supply staff, per cent	Above average or superior, per cent	Average, per cent	Below average or inferior, per cent	Range of marks, per cent
(A) Ante-bellum Group:									
1. Honor Graduates	67	28.3	31.3	70.2	18	85.5	9	5.5	92.64 to 98.29
2. Distinguished Graduates	191	17.8	31.9	52.3	21.4	69.9	26.8	3.3	89.99 to 96.98
3. Graduates	291	5.1	37.6	20.3	23.7	36.7	49.5	13.8	78.60 to 95.50
(B) Post-bellum Group:									
1. Honor Graduates	18	5.5	44.4	33.3	11.1	86.6	6.7	6.6	93.65 to 95.14
2. Distinguished Graduates	27	3.7	60	26	14.8	86.9	13.1	.....	92.65 to 93.64
3. Graduates who attended General Staff School	80	8.9	51.3	27.5	25	64.9	32.5	2.6	90.91 to 93.62
4. Graduates who did not attend General Staff School	53	11.3	64.1	20.8	20.8	42.5	47.5	10	84.89 to 92.77

In connection with the duties performed during the war by graduates of the Leavenworth Schools, it should be remembered that the necessity for and shortage of staff officers in the higher echelons held many of the "Honor" and "Distinguished" graduates to that class of duty and opened up command, particularly regimental command, to "Graduates." It will be noted from the above table that a larger percentage of "Graduates" performed command (regimental) duty than is the case with the "Honor" or "Distinguished" graduates. The reverse is true in the case of General Staff duty—such was to be expected.

Eliminating non-graduates of the Leavenworth Schools from consideration, the following shows the distribution by percentages to General Staff duty with combatant organizations of

	"Honor Graduates"	*"Distinguished Graduates"*	*"Graduates"*
Chief of Staff, Army	100	...	...
Asst. Chief of Staff, Army	...	60	40
Chief of Staff, Corps	75	25	...
Asst. Chief of Staff, Corps	9	54	37
Chief of Staff, Div.	24	50	26
Asst. Chief of Staff, Division	11	47	42

A comparison of the classifications of graduates of the School of the Line since 1903 with the field officers of the Regular Army as a whole, is shown below:

	Field officers of the Army, Per cent	*All Graduates School of the Line, Per cent*
"Above average" and "Superior"	48.6	58.2
"Average"	44	34.2
"Below average" and "Inferior"	7.4	7.6

As to the General Staff School, it is worthy of note that there is a wide

divergence in the recommendations received by students who graduated before the war and those who have graduated since that time. Prior to the war, recommendations drifted into the tactics and technique of the several arms. Recommendations of recent years cover primarily command and staff duties. This is best illustrated by two concrete cases.

Pre-war Graduate.—Especially well fitted for topographical officer on marches, expeditions and explorations; signal corps; line officer with volunteer troops with advanced rank; duty with organized militia (Governor's Staff).

Well fitted for post engineer officer; aide-de-camp; military attaché; military secretary, inspector general; Quartermaster's Dept.; subsistence dept.; pay dept.; Acting Judge Advocate of Dept.; college detail; recruiting officer; organizing and commanding native troops; staff officer with volunteer troops; duty with organized militia (special detail conducting field exercises in summer camps).

Recommended for detail at War College.

Post-war Graduate.—Recommended for command of brigade or division; for general staff duty—G.S., G-1, 2, 3, 4—division, corps, army; for instr. The General Serv. Schools; qualified for general staff duty.

Recommended for detail to take the course at the General Staff College.

It will be noted that since the war emphasis has been placed on the qualifications of the graduate for higher command, for major and minor staffs and the specific division of the staff for which best qualified, for instructor at the General Service Schools, and fitness for further training in the higher schools.

The conception of the fundamental purpose of the General Staff School has passed through several phases since the war, each of these phases giving added emphasis to the importance of command. As the commandant aptly states in his last annual report: "The art of command, in the higher sense, is the essence of the General Staff School course as contemplated for the coming year; is, in fact, the focal point around which all the other General Staff School studies are grouped and centered."

It was a fortunate result of the system employed at the General Service Schools that a group of officers had been developed, small in number, qualified professionally to take over important functions of command and staff, and at the same time to develop along correct professional lines a system of training necessary to produce the commanders and staffs required during the emergency.

Since the war the following sources of possible injustice to student officers and to the service staff, in connection with the marking system at the School of the Line and system of recommendation employed at the General Service Schools, have claimed attention:

1. Recommending graduates for important duties whose records during the war were such as to clearly demonstrate their lack of command and staff qualifications.

2. Not establishing a proper balance between a student officer's work at the school and his record of actual accomplishments during other periods of his career.

Both of these objections have been met, at least in a measure, by a recently adopted policy whereby the advancement of graduates of the School of the Line to the General Staff School, or of the latter school to the Army War Col-

lege, will not rest solely on their school accomplishments. Their records covering the remainder of their service are to be considered in connection with their school records, and each is to be given its appropriate weight in determining the selection of officers to be advanced to the higher schools.

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Classification of Officers

By Lieutenant Colonel Ralph McCoy, Infantry

A POPULAR misconception of the new system of classification is that it was designed with the object of eliminating officers from the service. But, with a more complete understanding of this system, the necessity for its existence and its methods of operation, this misconception disappears. The scientific solution of our personnel problems has been impossible in times past, owing to the lack of such a system. In many cases officers have been selected for assignments of great importance without regard for their qualifications, only because the essential data were not available in such form as could be used by selection boards.

The World War demonstrated the necessity of such a system beyond question, and accordingly the Personnel Section of the General Staff devoted itself to a solution of the problem. As a result, the present system was evolved. No one has claimed that it is perfect, but it functions satisfactorily and appears to have met with considerable favor from the service. During its two years of operation very few real defects have developed, and these can easily be corrected.

The elimination of unfit officers is by no means the primary object of the system. True, such elimination is accomplished, by means which are effective as well as humane, but its real mission is to give full credit for duty well done. The record of every officer is now shown in such form that merit cannot be overlooked in making selections for important assignments. It is now possible, for the first time, to eliminate the personal element—favoritism—in making these selections.

Some officers feel that they did not get a square deal during the World War. Having become embittered by their own experiences, they are inclined to look with suspicion upon any system of classification. The essential fact which they have not grasped is that, had this system been in effect during the war, they would probably not have been condemned on the judgment of one commander. Moreover, had it been in effect for five years preceding the war, commanders would probably have been selected on demonstrated efficiency rather than on seniority. It is quite possible that the officers whom they consider unjust would not have had a command.

In the Regular Army of twenty-five years ago, problems relating to personnel were exceedingly simple. Detached service details were few, and the normal status was duty with troops. Selection for special assignment was usually based on personal knowledge of the officer's qualifications. While this practice was recognized as vicious, there appeared to be no alternative. True, the efficiency record of every officer was kept on file in the Adjutant General's Office, but this record consisted of a mass of material of doubtful value and not in a form readily available for use.

Such was the state of affairs when we entered the World War, and the lack of a proper classification system was keenly felt by the War Department.

While selections for high command and staff duties were made with the greatest care, mistakes were inevitable. Moreover, there was nothing in the old system of efficiency reports which was applicable to the enormously increased commissioned personnel of the war-time army. From the beginning it was recognized that some system must be devised which would provide a means of recording the efficiency of every officer on a standard scale.

This necessity led to the development and adoption of the Qualification Card and the Scott system of numerical rating. Strenuous efforts were made by the sponsors of this system to convince the Army of its value and to standardize the "yardstick" used by different officers in determining relative efficiency, but with indifferent success. The qualification card had some value, due to the fact that it filled a great need, otherwise unprovided for. It contained essential data in the case of emergency officers but was entirely unsuitable as a means of classification of regulars. The system had one fatal defect, which two years of operation failed to overcome—the "yardstick" could not be standardized, and in consequence the ratings were considered practically worthless by every board which attempted to use them.

After the war, when the adoption by Congress of a scheme of promotion by selection appeared imminent, boards of officers were appointed to study efficiency records and to group officers of the Regular Army according to efficiency in classes I, II and III. No final action was taken on this classification, but the studies made were of great value to the Personnel Section of the General Staff in connection with the evolution of the present system.

Our present system made its initial bow to the public in 1919. Its bid for favor with the service was based upon its many advantages over previous systems. Briefly stated, these advantages are as follows:

1. It applies equally well in peace and war.

2. It gives full credit for work well done.

3. It determines an officer's general value to the service based on the reports of many commanders who have observed him in the performance of diversified duties.

4. It shows his fitness for particular classes of duty.

5. It presents these facts in a form that can readily be used.

6. It is so simple that it can be handled in the War Department with a reasonable number of officers and clerks.

7. It does not require too much time on the part of the reporting officer.

8. It is easily understood by the service.

The Efficiency Report, Form 711, A. G. O., is the basis of the system. Success or failure depends upon the extent to which the importance of this form is appreciated by the service and upon the care and good judgment exercised by reporting officers in its use. The old bugbear of examinations for promotion is now a thing of the past, favorable efficiency reports being considered sufficient proof of an officer's value to the service. The record of every officer stands or falls on the reports rendered by his military superiors. It is obviously of supreme importance that these reports be submitted only after careful study, based on observations of duty performed.

Instructions on the efficiency report blank require reporting officers to in-

form the officer concerned *by letter* regarding unfavorable entries of fact. This is not the case with unfavorable entries of opinion, but it is the duty of officers to acquaint those under their commands with their deficiencies in whatever manner seems best. This matter of reporting adverse opinions has perhaps met with more objection from the service than any other feature of the system. Many officers believe that expressions of opinion should not be required, or that, if required, the officer concerned should be given an opportunity to state his case, exactly as with adverse reports of facts. These objections would be sound if all opinions expressed on efficiency reports were taken at their face value, but such is not the case. Instructions governing classification require that an adverse expression of opinion will be given only such weight as it merits, considering the rank, experience and judgment of the reporting officer, *and the extent to which his opinion is corroborated by opinions expressed by other officers.*

As time goes on, the record of each officer becomes more valuable. Every efficiency report added to his record increases the accuracy with which his classification card in the War Department reflects his value to the service. An occasional adverse report of opinion, such as "lacking in tact," "lacks energy," or "poor judgment," need cause an officer little concern if other reports indicate that such opinion was not well founded. But, if a number of different reporting officers are in substantial agreement as to these deficiencies, there is justification for the assumption that they exist.

Efficiency reports are rendered annually on June 30 and also whenever an officer's status changes with regard to commanding officers. They are forwarded through channels to the Adjutant General of the Army and thence transmitted to chiefs of branches, who are charged with the duty of classification. Beginning on July 1 each year, the records of officers are revised in the light of efficiency reports and other papers received during the year. The great importance of this work of classification and revision is recognized, and every precaution is taken to prevent injustice being done to individuals or to the Government.

When the record of an officer falls dangerously low, the chief of his branch is required to notify him to that effect in a confidential letter. In accordance with this policy, the Chief of Infantry has sent out letters of caution to certain infantry officers. These letters, sent with the sole object of informing officers of their deficiencies in order that they may correct the same, appear to have been accepted in the spirit in which they were written. Certain it is that, in the large majority of cases, great improvement has been noted in subsequent reports.

As the importance of classification is becoming better understood by the service, the quality of efficiency reports shows corresponding improvement. There is still some misconception of the word "average" as used in this system. The remark, "only an average officer," which frequently appears, implies that the officer's qualifications are below par, whereas the proper conception of "average" in this connection is "proficient," "satisfactory." An "average" officer should be one who can be depended upon to perform satisfactorily any duties pertaining to his grade and arm. Aside from this misconcep-

tion, the more common faults of reporting officers are failure to analyze, as indicated by uniform ratings of "above average" or "below average" in all qualifications, and remarks inconsistent with ratings.

The efficiency report furnishes material for the "specialty file," a most important feature of the classification system. This is kept in the Adjutant General's Office, chiefs of branches keeping a record only of those specialties which pertain particularly to their branch. These files are designed to show what officers have made a success in each form of special duty or service which an officer may be called upon to perform. More than fifty such specialties are listed, and under each heading are carded the officers who have succeeded in that particular line. While this specialty file is of considerable value in peace, its primary function is to furnish information in time of war.

Ratings and special qualifications having been determined by the chief of branch, they are reported to the Adjutant General, who causes them to be transcribed to the qualification card. On this card the ratings are expressed in symbols, which are described in Circular 554, W. D. 1919. An officer intending to inspect his record in the Adjutant General's Office should read that circular in order to understand the symbols. Each symbol has its distinctive color. The card thus shows at a glance an officer's ratings on general value to the service and on special qualifications. The file of qualification cards constitutes a highly confidential record to which no one may have access except the officers concerned, and certain designated officers of G-1, the Personnel Bureau A. G. O., and the office of chief of branch.

During the process of classification, inefficient officers are discovered. When examination of the entire record of any officer convinces the chief of branch that he is no longer an asset to the service, action is taken under section 24b, Act of June 4, 1920. The procedure under this section is prescribed in Special Regulations No. 130, and a study of that document should convince the most skeptical that the interests of the officer concerned are fully safeguarded. It is provided that on September 1 of each year chiefs of branches will submit the names of inefficient officers for the action of the Classification Board. This board, composed of five general officers, considers the whole record of each officer and places him either in Class or Provisional Class B. If in Class A, no further action is taken. If in Provisional Class B, the officer is entitled to a full and impartial hearing before a court of inquiry. If the finding of the court is unfavorable, the Final Classification Board places him in Final Class B. He then has the right to petition the President for an order in revision. After the President has approved the classification, the case is sent to the "honest and faithful" board, which determines whether the unfavorable classification was due to the officer's neglect, misconduct, or unavoidable habits. If the finding of this board is unfavorable, and the case is finally approved by the President, the officer is discharged without pay. If the finding is favorable, and the officer has less than ten years' service, he is honorably discharged with one year's pay. If he has more than ten years' service, he is placed on the unlimited retired list with annual pay at the rate of 2½ per cent of his

active pay, multiplied by the number of complete years of active commissioned service. The maximum retired pay under this clause will not exceed 75 per cent of active pay if retired prior to January 1, 1924, and 60 per cent of active pay if retired after that date.

There is no injustice in the procedure outlined above. Assuredly the Government is under no obligation to carry inefficients on the active list of the Army, and the method of elimination adopted in the Act of June 4, 1920, is eminently fair and impartial. It is difficult to imagine how stronger safeguards could be provided in the interest of the officer concerned. In all business and professional life outside the service, as inefficients are discovered they are ruthlessly, often brutally, eliminated without notice. The weak commander in battle can do an immense amount of harm. The reasons for his elimination appear to be more urgent than is the case with the inefficient civilian, and the method prescribed, as compared with the methods of civil life, is exceedingly humane.

But it is in giving credit for duty well done, rather than in the elimination of inefficient officers, that the highest function of the classification system is found. It is this feature which renders possible the scientific handling of personnel problems and the elimination of favoritism. Each year, adding its increment to the record of every officer, increases the value of that record. To us, as reporting officers, is assigned a highly important duty; upon the care and judgment which we exercise in performing this duty depends the ultimate success or failure of the system.

Newspaper Headings

"Fish Come Out of Oil Well."—We know of a certain species that go into oil wells, but we never heard of any coming out with a whole skin.

—

"Florida Scientists Find Lost Race."—That's nothing. A fellow citizen of theirs has found three of them in his day.

—

"Singer Gets $1000 a Night."—Why shouldn't he? Look at the risks he runs.

From Tientsin to Peking

By Captain Warren J. Clear, 34th Infantry

I WAS awed by the very thought of seeing Peking—Peking the mysterious, the magnificent, the terrible, with its treasures of silk and silver, bronze and porcelain, had always been to me the sacred city of another world. Peking the Dream City—city of gods and emperors, of siege and massacre—was only 90 miles away, but it seemed just as inaccessible, just as mysterious and enchanted as when 12,000 miles of intervening distance lay between me and its mighty walls.

On each side of the train as it sped north stretched illimitable fields of corn and kaoliang. The seed of the latter is like that of the millet that we know in the United States, and its aspect is that of Indian corn, only that its stalks are thinner and its leaves more plentiful. It grows to a height of from 8 to 12 feet, and Kuroki showed the military world what excellent cover it affords when he marched his legions under its long, thick leaves at Tiensuiten and Liaoyang and smashed the unsuspecting Russians. The kaoliang will play an important part in the military history of any nation that makes a battleground of China.

Through the waving fields, in every direction, wound narrow roads, ankle-deep in dust, unpaved, deeply rutted and pocky with holes. Time, and the steel-shod wheels of thousands of Chinese carts, have sunk these roads 5 to 25 feet below the level of the fields, and each rainstorm transforms them into rivers of mucilaginous mud. Yet these miserable trails are China's only highways—these and her treacherous rivers. A look at such roads will explain why China is the land of famines. The question is not one of food but of transportation. Let famine lift its ugly head in a certain section and it is a foregone conclusion that the people there will starve—unless they migrate. There may be surplus foodstocks 50 miles away, but it takes dollars and carts and roads to move supplies for a million people, and the Chinese have found it cheaper and easier to bury the people. Three railroads parallel the coast of China, but in the vast interior provinces the steel rail and the locomotive are unknown.

Everywhere unkempt villages, their mud houses surrounded by mud walls, infest the fresh, green fields, and the ubiquitous cemetery, studded with conical graves, lies beside each village. The Chinese bury their dead in shallow graves, seldom more than 3 feet deep, but over each ponderous wooden coffin they erect a cone of earth, the size of the cone or mound depending upon the importance of the bones it shelters. The grave of a village headman always towers high above the other mounds in the village cemetery, sometimes reaching a height of 50 feet or more, and the massive tombs of the rich prove that here class distinctions must be preserved, even in death.

Slant-eyed, brown-skinned babies, minus the proverbial string of beads, their noses never yet touched by a handkerchief, were rolling about on the threshing floors—smooth, sun-baked pieces of ground where the wheat crop is scattered and treaded out of the husk by donkeys attached to stone rollers.

Now and then the train passed long lines of wheelbarrow men pushing their unwieldly vehicles over the dusty roads. The Chinese wheelbarrow, unique among the wheeled vehicles of the world, is constructed somewhat as follows: two wooden platforms, each a yard long and a foot wide, are suspended side by side on a frame about 6 inches above the axle; between the platforms rises the wheel, over 3 feet in diameter, rimmed with a heavy iron tire. The latter is grooved like a pulley to prevent skidding on the treacherous slopes the barrow coolie must negotiate.

The heavy web straps around each coolie's neck end in loops which fit over the handles of the barrow, and when the coolie stands erect the legs of the barrow clear the ground. This throws the weight of the balanced portion of the load on the wheel. Any weight not borne by the wheel is carried by the shoulders of the coolie. The arms and hands merely balance the barrow, and its unwieldly load of cotton or brick often weighing over half a ton.

Mile after mile, over rough hill trails and through crowded city streets the wheelbarrow coolie creeps along, pushing before him the bulky load that shuts off his view of the road before and makes collisions of common occurrence. His lot is a hard one, and the constant physical strain usually breaks him down before he reaches the age of thirty years, but he has made Tientsin, Hankow and Shanghai the most prosperous cities of China and held Asia's freight rates down until today they are the lowest in the world.

"Why do all these Chinese wheelbarrows screech and scream so?" asked an English lady tourist as our train rolled pass the toiling procession. When I told her that the Chinese found it cheaper to wear out coolies than to waste grease on axles she smiled incredulously and condemned me as a "facetious American." "Elbow grease" is plentifully used in all Chinese occupations, and the coolie never thinks of applying anything else.

Back of the villages and the kaoliang rose the deforested hills, with graceful, delicate pagodas nestling on their slopes, and beyond the hills, in the dim distance, loomed the blue mountains, miles and miles away.

Over the fields of melon, corn and kaoliang the heat shimmered and sizzled, and the mountains that I saw from the train window may have been part of a great mirage. Mirages are more common than mountains on the way from Tientsin to Peking, and sometimes they perform wonders. Someone once said that a mirage is a moving picture, a reflection of the real—by wireless. This must be so, for I have lain on the rifle range at Leichuang and watched the ships come and go in Chinwangtao harbor, 80 miles away. Many a doughboy, seeing similar sights on the old German target range south of Tientsin, has sworn off forever.

For about three hours the train had been running through the interminable fields of green and past squalid villages when suddenly one of the passengers, with a sigh of relief, pointed out of the window. In the north loomed a gray mass that stretched as far as the eye could reach. As we drew nearer it resolved itself into a great, battlemented wall—an endless, massive, bastioned rampart, with magnificent towers rising into the cloudless blue of the Peking sky. Grim, relentless, repellent, impenetrable, that mighty wall suggests the magnifi-

cence and grandeur to be found within its gates.

A friend touches my arm and ends my dreams of Nebuchadnezzar and Cyrus. "That's where Calvin Titus[1] climbed the wall in 1900," he says, "and there's the Hsiao-shui Men (water gate) that the Allies broke through when they relieved the legations."

When the train stopped I went out through that gate and 100 yards from it entered the Grand Hotel des Wagon Lits, a typical European hotel, its tea tables surrounded by tourists from all corners of the earth. The dapper clerk at the desk told me that the last room was taken and suggested the Grand Hotel de Pekin. The uniformed porter bundled me into one rickshaw and my suitcases into another, and off we went down a broad avenue between the walls of the British and Japanese legations. A portion of the British wall of Boxer days has been left standing—a gray, grim, shell-torn monument eloquent of days of darkness and terror and deeds of heroism. Yet someone has painted the words "Lest We Forget" on the face of this piece of shattered wall, as though it could not speak for itself.

We whirled through a fortified gate at the northwest corner of the Italian legation, swung east along another avenue that parallels the north wall of the legation quarter, and a few moments later I was watching the world go by in the spacious lobby of China's newest and biggest hotel. That lobby is the heart of Asia—one might say the heart of the world. In it congregate the men who sway the destinies—and control the wealth—of kingdoms and republics. General Janin, commander of the French forces in Siberia, and his resplendent staff in variegated uniforms clanked in to dinner as I sat there; Ataman Semenoff, known in Siberia as "Semenoff the Butcher," was treating some Russian friends to American cocktails; picturesque, gigantic old General Horvath, deposed dictator of the Chinese Eastern Railway, was stroking his long white beard while waiting for his friends; Thomas W. Lamont, partner of J. P. Morgan and sponsor of the Consortium, was there with a party of American and Chinese financiers; the president of the American Tank Car Company, the head of the Toyo Kisen Kaisha steamship lines, and captains of many of the world's greatest industries were seated in the wicker chairs in that foyer, awaiting the arrival of other celebrities. Yet the gathering was not an unusual one—for Peking—because here the political, military, financial and industrial giants of the world are ever congregating.

When I went in to dinner in the magnificent dining-room a smiling Chinese waiter, immaculate in light blue coat and white apron, handed me a menu that included every dish one might order at the St. Francis—and the wine list would create a riot in New York.

The next morning I walked through the Legation Quarter, a foreign fort in the heart of China, with glacis, walls and artillery manned by the troops of many nations. To the south it is guarded by the mighty rampart known as the Tartar Wall, which divides the Tartar from the Chinese city. To the north, east and west a wide glacis

[1]Lieut. Col. Calvin P. Titus, U. S. A., then Bugler, Company "E," Fourteenth Infantry, volunteered to climb the Tartar Wall in the face of the enemy when the Allied Relief Column arrived before Peking.

affords an excellent field of fire for the artillery placed behind the embrasured walls. Each legation, in turn, is surrounded by its own wall and garrisoned by its own national troops, but this arrangement can hardly be said to contribute to the military strength of the quarter.

One passes many types of the professional soldier on Legation Street—small, sturdy Japanese; tall, picturesque British Sikhs; swarthy, smiling Italian Marines; round-faced, boyish-looking Dutch sailors; smart-looking Belgian infantrymen, all veterans of the World War, but the American Marine in his dress uniform is the neatest, most capable-looking soldier of them all. I visited the Marine Corps barracks—fine, spacious stone buildings in an immense compound filled with beautiful shade trees, and was shown the library, large gymnasium, swimming pool, roof garden, bowling alleys and recreation room furnished with pool and billiard tables and comfortable easy-chairs. A fast baseball game was in progress on the field west of the barracks, and the six tennis courts were drawing enthusiastic galleries despite the red-hot rays of the midsummer sun.

"We have all the comforts of home," said the post exchange steward with malicious glee, recognizing me as a poor doughboy from Tientsin. "And *then* some," I agreed, wondering how the Marines always manage to get the best that's going—even in China.

I spent the remainder of the day wandering through old Peking's streets, the widest and most wonderful streets in the world, where one never tires of the kaleidoscopic traffic scenes and the multitudinous, picturesque crowds. To the tourist fresh from Canton and other cities of South China the streets of the Tartar City are a marvelous surprise. Instead of narrow, devious alleys overhung with multicolored shop banners and filled with screeching, jostling pedestrians, he sees great macadamized thoroughfares, wider than Michigan Avenue, teeming with every imaginable kind of vehicle and beast of burden.

American-built limousines, taxicabs and motorcycles careen madly past Peking carts, sedan chairs, rickshaws, Victorias, bicycles, gorgeous wedding processions and stately, solemn funeral processions, while along the turf roads that border the macadamized avenues amble pompous dignitaries astride diminutive donkeys, long trains of camels from Mongolia, Chinese soldiers in quilted uniforms mounted on sturdy Manchurian ponies, and pack trains composed of donkeys, horses and mules.

You quickly note that man himself is the greatest burden bearer in China. With drag-ropes tied about his waist he draws the boats up the rivers and canals; with slings over his shoulders he pushes the heavily laden wheelbarrows, and what he cannot pull or push he carries on his head or back. The coolie carries merchandise very cheaply—at the rate of thirteen cents a ton a mile—but China pays dearly for employing over 20 per cent of her best laborers as beasts of burden instead of producers.

The camel is the most picturesque and romantic figure in the streets of Peking, and the traveler delights in watching him stride majestically down the broad avenues, but the kingly carriage and long, shaggy coat hide a multitude of vices known only to the Mongolian driver who describes the stately "ship of the desert" as a bad-tempered, remarkably stupid brute capable of the

worst treachery and ever ready to bite the hand that feeds him. Nevertheless the camel can travel where nothing else can and has been known to cross the Gobi without food or water, living only on the cache of fat that he had accumulated under his two humps in more prosperous days.

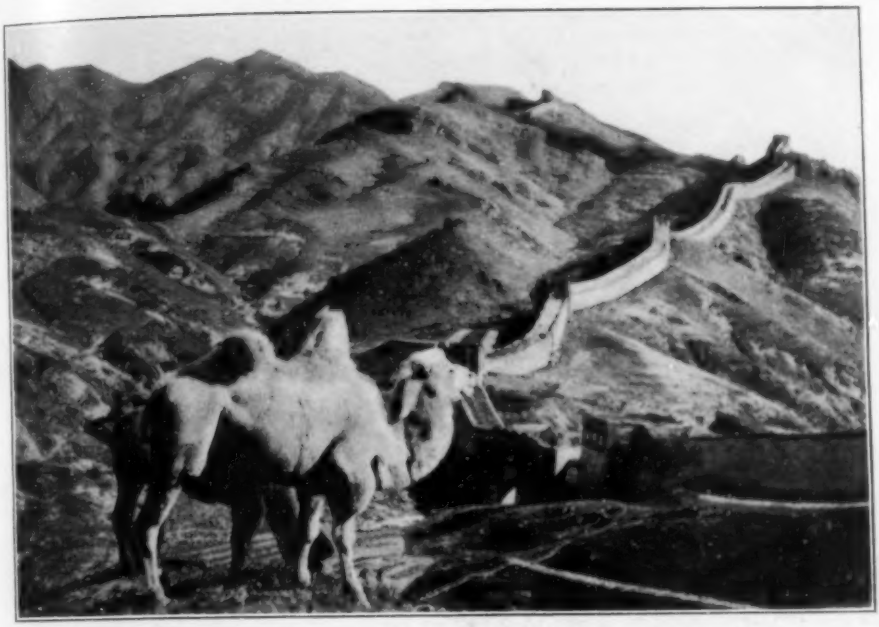
The rickshaw boy whirled me through the several sections of Peking, each area known as a city. Outside the massive walls of the Tartar City lies the teeming Chinese City, inhabited by Peking's 2,000,000 natives. The Tartar City is subdivided into the Legation Quarter where the foreigners reside, the Imperial City, surrounded by flaming red walls, and the Forbidden City (within the Imperial City), containing the palaces of the emperors and the mandarins.

The Forbidden City was once holy ground, where only the feet of the anointed, the emperors, the Sons of Heaven, might tread. Now its marble bridges are crossed by foreigners, coolies, peddlers and beggars, who take a seeming delight in violating the once sacred precincts.

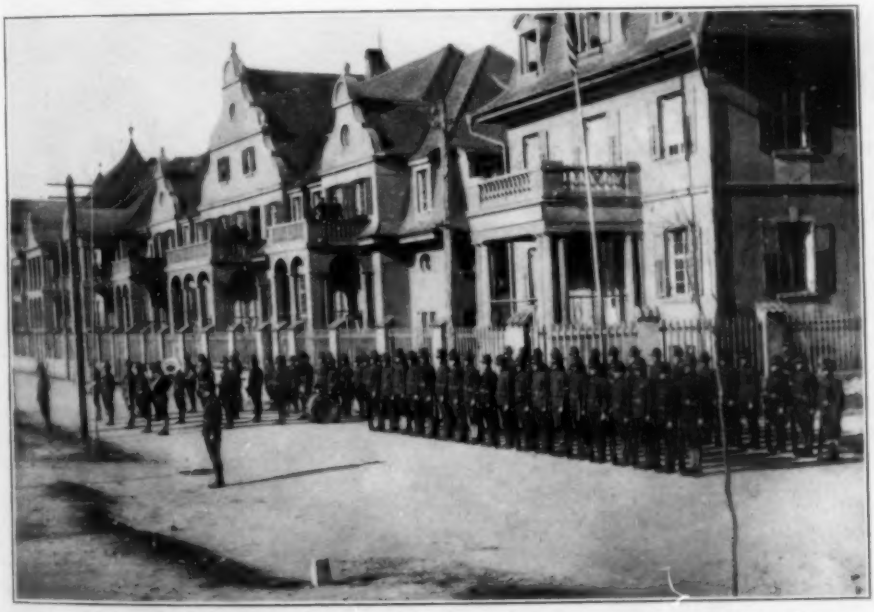
The streets of the Chinese City—the so-called *hutungs*—are merely narrow, unpaved alleys filled to overflowing with Chinamen, horses, mules, donkeys, camels and vehicles of every size and shape. Long-axled, denim-hooded Peking carts, dilapidated European carriages, heavily laden wheelbarrows, ponderous sedan chairs and innumerable rickshaws threaten the life of the inquisitive pedestrian who, one moment, is groping through choking clouds of germ-laden dust and the next is wallowing ankle-deep in filthy mud. Everywhere messes are stewing over braziers, and roasted ducks and chickens, treated to a finishing coat of varnish, are strung along the outside of the shops. Now and then a woman of the Manchus is seen picking her way through the crowd, her cheeks painted a bright red after the fashion of some of her western sisters. Not so long ago it would have meant condemnation and an ignominious death for her to be seen alone in the streets of the city, but western ideas are slowly permeating the mind of the Orient and making woman's lot an easier one.

In both the Tartar and Chinese cities the streets are lined with one-story, tumbledown shops, or dingy gray walls, and it is behind these walls, hidden from the profane gaze of the foreigner, that one finds the architectural splendors of Peking—palaces, green, gold and crimson, with lace-like roofs of imperial yellow; temples crowning triple-terraced marble altars gleaming snow-white in the sun; porcelain pagodas and ancient shrines standing at the edge of a fairy lake confined by marble walls; magnificent marble *p'ai-lous* set in quiet groves of mulberry and cedar.

Many a tourist, spending all his time in the streets, shops and hotels of Peking, leaves the capital without having seen its real splendors. The Imperial Museum in the Forbidden City contains some of the world's greatest treasures—imperial robes of the sixteenth century and before, hung with precious jewels; saddles, swords and armor of the emperors, studded with diamonds and pearls; bronzes dating back to 400 B. C.; panels of jade and ivory, exquisitely carved and priceless because impossible of duplication; cloisonné and porcelain treasures of ten dynasties and the furniture, rugs and tapestries of a hundred emperors.



THE GREAT WALL NEAR NANKOW PASS, NORTH OF PEKING



GUARD MOUNT IN FRONT OF THE BARRACKS OF THE U. S. CHINA EXPEDITIONARY FORCE AT TIENTSIN

THE ITINERANT FRUIT VENDER, A FAMILIAR FIGURE IN THE STREETS OF PEKING

MAN POWER THE MOST AVAILABLE COMMODITY OF CHINA

A TRANSGRESSOR OF THE LAW AWAITING EXECUTION

The Camel Boy

The Restaurateur

A Few of China's Fairest

THE GRAND HOTEL DE WAGON LITS AT PEKING

A TYPICAL FARMER'S HOME IN NORTH CHINA

Then there is the Summer Palace with its lovely lake carpeted with lotus blossoms; the Temple of Heaven lifting its graceful triple roof into the cloudless blue of Peking's skies, and a score of other wonders that make the City of the Sons of Heaven the most wonderful capital in the world. Those who have seen its streets and walls, its palaces and temples and shops have seen the uttermost East and must forever feel the lure of the Land of the Dragon, the spell of the enchanted kingdom that links the present with the past.

Robbing Tactical Units

I agree with you that in order to fix the number of officers beyond the necessary number required for the tactical units there must be a compromise, but I think it is a dangerous thing to compromise on the wrong side on that number. I think the time will never come when we shall be able to get along in this country with any less than the number we have now, and we find now that the demands all over the country for these officers to help in training and teaching and instructing the civilian population to prepare for national defense are more than the War Department can answer. And they have to rob the tactical units they maintain today in order to get many of the officers to put at this work. The organizations of enlisted men are short of officers, and have been for years, and yet the call comes for officers to come out and train the civilian population. (*Statement of Mr. Greene, of Vermont, on the floor of the House, during the debate on the Army Appropriation Bill for* 1923.)

Historical Precedent

THE matter of maintaining the American Expeditionary Forces in France as a separate and distinct component of the combined forces of the Allies has its precedent in history. Similar instructions were issued to the Comte de Rochambeau by the King of France when he sent troops to the United States during the Revolutionary War.

We reproduce below the secret instructions of the Comte de Rochambeau and follow with the instructions of Secretary Baker to General Pershing on the subject when he was sent to France in 1917. An examination of the text will show the similarity.

INSTRUCTIONS TO COMPTE DE ROCHAMBEAU[1]

Secret Instruction

for the Sieur Comte de Rochambeau Lieutenant general, commanding the Detachment of French troops sent by His Majesty to the aid of the Congress of the United States of North America.

Article First

His Majesty desires and orders the Sieur Comte de Rochambeau to hold, so far as circumstances may permit, the Corps of French troops, of which His Majesty has confided the command to him, assembled in one Corps, and upon occasion to represent to General Washington generalissimo of the troops of Congress, and under whose orders the French troops must serve, that the King's wishes are that there shall be no dispersion of the French troops and that they shall always serve as an army corps and under French generals, except in the case of temporary detachments which should rejoin within a few days the principal Corps.

Article Second

His Majesty understands that the Corps of French troops, which He is sending to the aid of the Congress of the United States of North America, is its own guard and is charged with all the Service that may regard its safety in the Camps, cantonments or quarters which the Body of troops shall be in the position of occupying.

A copy conforming to the original signed and approved by the signature of the King remained in my hands at Versailles the first of March 1780.

LE PRINCE DE MONTBAREY.

INSTRUCTIONS OF SECRETARY BAKER TO GENERAL PERSHING

. . . . . .

5. In military operations against the Imperial German Government, you are directed to cooperate with the forces of the other countries employed against that enemy; but in so doing the underlying idea must be kept in view that the forces of the United States are a separate and distinct component of the combined forces, the identity of which must be preserved. This fundamental rule is subject to such minor exceptions in particular circumstances as your judgment may approve. The decision as to when your command, or any of its parts, is ready for action is confided to you, and you will exercise full discretion in determining the manner of cooperation. But, until the forces of the United States are in your judgment sufficiently strong to warrant operations as an independent command, it is understood that you will cooperate as a component of whatever army you may be assigned to by the French Government.

. . . . . .

NEWTON D. BAKER.

[1]From Rochambeau Papers, vol. 2.

Infantry Organization—an Experiment in War[1]

By Colonel John H. Parker, Infantry

This paper is an effort to sum up all of the fruits of a tactical experience covering a period of thirty-four years. Experience with regular troops, volunteers, militia and National Army; with mounted troops, artillery, machine guns and infantry, all in combat as a commander in every grade to include that of colonel and the command of every unit from a platoon to a brigade.

This paper has been in preparation over three years, and the aid has been sought of many different officers, all specially qualified to furnish information, correct errors of fact, or criticize errors of doctrine and judgment.

It does not purport to have any official character, least of all to be "official doctrine." It is the boiled-down conclusions reached from a very long and very varied experience, during which it may not be too immodest to claim that at various times the author has shown foresight that has been amply verified by subsequent developments in war.

The sole object of publication is a desire to benefit the service. Before publication the highest authority was consulted and did not withhold approval of the publication in that sense, and for that purpose.

As to the author's judgment of the importance of this paper, the following statement is deliberately made:

"I would rather be known in military annals as the author of this one paper than by any other title to remembrance that has grown out of my service."

JOHN H. PARKER,
Colonel, Infantry.

INFANTRY ORGANIZATION is the most important subject that can attract the attention of the military student at the present time. This is especially true in our country, where the tanks, the machine guns, the trench artillery and all the minor utilities in combat are organized as an integral part of the infantry. It is the infantry that wins or loses tactically. Other elements may contribute to its success, but none or all of them combined can win the combat. The infantry, and only the infantry, can actually go forward and take physical possession of the field of battle, including the organizations defended by the enemy and the prisoners of war who are captured as a result of the operations; only the infantry can win the combat. It is the winning of the combat that wins the war, and no element but the infantry can drive the iron home. Sound organization can help the infantry to win in a shorter time and with smaller loss. The American infantry will win in the end, anyway, because it is composed of so much better material than any other infantry that it will win by sheer superiority of material. But faulty organization has cost it dearly in the past and will cost it dearly in the future. The adoption of sound organization will minimize its losses and speed up its success.

Sound organization can do much to save unnecessary losses of these precious infantry units—the American citizens who compose the infantry. Omitting all other claims to consideration for the ideas herein presented, a claim may be

[1]This article will be published in three instalments in the INFANTRY JOURNAL of May, June and July, 1922.

based upon them as a report of a unique, authorized departure from routine methods, based upon combat experience. The object of the departure from routine method was to improve the combat efficiency in the regiment. This article will retail the nature of the variation from routine organization, the considerations upon which this variation was based, the authority under which it was made, and the results that were obtained by it. The results are officially of record and supportable by many living witnesses, including two regimental commanders and four battalion commanders who were associated in the experiment, and who are available to check up any errors in regard to facts or deductions in this paper. The whole experiment constitutes a fine illustration of *the flexibility of the American system*, in which such orderly and authorized departures from routine are always possible if done in a proper manner.

There are two ways to approach the general subject of organization. One is from the top, down; the other from the bottom, up. One reasons from the whole to the parts; the other from the parts to the whole. Experience teaches that the standard size of the smallest Grand Combat Unit is determined by the road space that can be deployed in a single day, regardless of whether that unit be called a corps, a division, a wing, or what not. The size, determined upon that basis, is equally independent of the composition of the unit and of the equipment used by it. Experience also teaches the necessity for functional independence for every unit that is differently organized or differently equipped from the other troops with which it is serving. This functional independence is equally necessary when based on fundamental difference of equipment, whether we discuss artillery, gas service, machine guns, trench artillery, cavalry, infantry, or any other element of the service. When the problem of organization is approached from the standpoint of equipment we must commence at the bottom and work toward the top, because it is in the smallest tactical combat unit that the difference in equipment finds its clearest expression. But both lines of reasoning are necessary, both result from the experience of somebody, and neither can be neglected if we want maximum success with minimum time.

Here it will be well to clear up certain terms that will be used in a technical sense in this discussion. These terms are: Minor Combat Unit, Major Combat Unit, Grand Combat Unit, and *Fighting Group*. Possibly these terms may be given a meaning in this paper that cannot be found in any dictionary of military terms; but the poverty of English military vocabulary has made it frequently necessary to either coin new military terms to express new military ideas in the last few years or else to adapt old expressions to fit new conditions. The whole science of tactics is in a state of flux, never more so than during the last year of the World War; and military vocabularies must, perforce, be so modified as to fit new conditions.

In every organization there is a basic unit, the smallest unit of the organization, composed of the minimum number of men with the minimum amount and variety of equipment that can function for the purpose of the organization. The minimum of men and of material is dictated by economy of organization, and the minimum of variety is dictated by simplicity as well as economy. This

principle is true of commercial organizations, of labor gangs, and of all industrial enterprises. It is equally true of military organizations. In the civilian world this minor unit would be called the Minor Working Unit. As the very purpose of the infantry is to fight, it will be called in this discussion the *Minor Combat Unit.*

In every organization where any considerable number of men must cooperate to accomplish a purpose, and where the efforts of the Minor Working Units must be coordinated in order to secure maximum results, several of these minor units are combined and directed by a superior. For example, in drilling a tunnel under a river one Minor Working Unit will run the rock drill; another will remove debris; another will attend to the air pressure and all the machinery by which the water is held back; another will attend to the casing and see that as the drill unit progresses the new casing is set in position. All these Minor Working Units will combine their efforts in order to accomplish the purpose of the chief engineer, who will combine and direct all their efforts. If it be a twin tunnel, two such combined groups may work at each end of the tunnel, each with its own assistant to the chief engineer in charge, and all of them coordinated and directed by one chief engineer.

Each one of these units would combine all the Minor Working Units necessary to the complete performance of its task, and thus there would be four different complex groups, each under its own assistant chief, all working at the same task. Each of these complex groups under one assistant chief might be called a Major Working Unit, and the whole of them combined into one great working party might be called a Grand Working Unit. The chief engineer may have many such Grand Working Units in operation at different parts of a railroad system; one Grand Working Unit digging a twin tunnel under the Hudson River, another building the Pennsylvania Terminal Station, another bridging a chasm in some mountain gorge, and still another attending to the directive and designing elements of all these combined operations that would be only a part of the processes by which the great railroad system accomplishes its huge mission.

Similar groupings must exist in an army. Minor Combat Units, homogeneous in character within their own small organization, must be combined into Major Combat Units for direction, coordination and control. The Major Combat Units must be combined into Grand Combat Units in order to insure the smooth-running mutual assistance that comes from coordinated effort.

But in the Army we have a condition in combat that is entirely different from the operations of the railroad engineer. Our point of contact is constantly shifting, the conditions of contact are constantly changing, the obstacles to be overcome are not only the physical obstacles that the railroad engineer must meet but also all physical obstacles improved and increased by all the diabolic ingenuity that the trained minds of skilled opponents can conceive and execute.

These constantly changing conditions must be met by constantly changing combinations of the Minor Combat Units; and thus arises a new element in military operations that does not find an analogy in the work of the railroad engineer. For this discussion this new

element will be called the Fighting Group, and it consists in all cases of whatever combat units may be combined at one place under one mind with one mission in the combat. It is the variable in the military formula.

The conception and application of *The Doctrine of Fighting Groups* is the departure from routine methods to which attention is herein invited, together with the results that were obtained by the application of this doctrine. These results not only improved the combat efficiency of the regiment, but also enabled it *to preserve fighting efficiency through three divisional operations without rest or refitting, and, after its third successive divisional operation before being relieved from the line, each time with a fresh division, it was able to absorb replacements in all its utilities while on the train en route to Belgium and to immediately enter the fighting line with these replacements for its fourth divisional offensive without rest other than a railroad trip from the Argonne to Flanders.*

A rational way to approach the organization of minor units is to consider their equipment, the number of men necessary to enable the unit to function as a unit, and then base the organization of the minor unit on that study.

A rational way to approach the organization of a Grand Unit is to consider how many minor units can be accommodated in the road space of one day's deployment, what minor units can be most effective as a part of the Grand Unit for the work in hand, how many of the minor units selected can be included in the road space, and then make up the composition of the Grand Unit on the results of that study.

By a "minor unit" in this discussion is meant one that is homogeneous, equipped with the object of developing normally a single method of fighting. For example, the crew of an automatic rifle would be such a minor unit and would include not merely the gun pointer but also his assistant and his ammunition carriers. Together these make up a crew that must act as a unit if the utility is to function in action for any considerable length of time. In the same way, the crew of a machine gun with its equipment would be a Minor Combat Unit; others would be the Stokes with its detachment, and the one-pounder with its detachment, the rifle grenade thrower with its operator and ammunition carriers. Viewed from the standpoint of higher organization, the infantry squad is a similar Minor Combat Unit.

A Minor Combat Unit is not the same thing at all as a Fighting Group. The Fighting Group consists of all the utilities that are grouped for more effective combat purposes under one command for one mission at a particular time and place. The Minor Combat Unit is a fixed unit, whose size and components are determined absolutely by the nature of the equipment; the Fighting Group is the most fluidic element in combat, varying with the constantly changing phases of the combat both in its make-up and also in its total strength. For example, a group of infantry on cossack post with an automatic rifle and its crew would be a Fighting Group, composed of two Minor Combat Units, but with one mission, one place on the field, and single command. To such a Fighting Group might be added, according to the tactical situation, rifle grenade throwers and crews, one or more machine guns with crews,

one or more Stokes mortars, a one-pounder and crew, and in one case it was found desirable to add a 3-inch gun with its crew. All this complex body, composed of separate Minor Combat Units, became one Fighting Group, with one location on the terrain, one mission, and one commander.

Zero hour struck. The composition of this Fighting Group was instantly changed by its new mission. The infantry element moved forward to the assault. The lighter components of the group followed the infantry closely, sorted out by fatigue and by the difficulties of locomotion through a tangled No Man's Land according to the weights of their respective impediments. In a few minutes the 3-inch gun was firing from its position over the heads of the other elements; the infantry was far in advance; the rifle grenades and the automatic rifles with their loads of ammunition were struggling bravely along to keep as nearly up with the infantry as possible and to overtake it at the first check in its progress; and the others, the machine guns and Stokes mortars and the one-pounders, were somewhere behind but advancing as fast as they could tote their inconvenient and extremely heavy loads across wire, shell holes, tangled underbrush, and get over muddy trenches with it from time to time. The Fighting Group had dissolved into its component elements, the Minor Combat Units of which it was composed, like a kaleidoscope. A short time afterward the leading element, the infantry, struck a snag—a German machine-gun nest—and its progress stopped while scouts felt their way swiftly but cautiously to both flanks for a line of approach. The rifle-grenade bearers came up. Immediately a new Fighting Group was formed. In a few minutes some automatic riflemen appeared with their ammunition bearers. The Fighting Group was growing. As soon as one of the scouts reached the flank of this "nest"—the German machine gun is limited in azimuth—Fritz put up his hands, and instantly the Fighting Group automatically dissolved as the advance was resumed.

Here we need *Flexibility of Organization* that will permit as many different groupings of Minor Combat Units as combat conditions may require and will make them easy to do without getting any authority from somebody far in the rear.

For these purposes, any number of infantrymen who are equipped alike and can be managed by a single commander constitute one of these Minor Combat Units, but the moment you add anything with different equipment to the party—e.g., rifle grenades, with their heavier weights and their "team" organization in order to function—that moment you have a Fighting Group instead of a Minor Combat Unit. You have introduced an element that makes it a complex instead of a homogeneous party.

The function of command in combat, from the moment we commence to combine our utilities, consists largely in directing these constantly changing combinations of Minor Combat Units that go to make up the Fighting Groups.

Regardless of Tables of Organization, in combat all theories go into the discard, and the successful tactical commander is the one who, consciously or otherwise, judiciously exercises the authority vested in him to direct these combinations. In combat, at the point of contact with the enemy, this authority

is unlimited over the elements there disposable; but the availability of these elements depends upon correctness of our theory of combining minor combat units to form Fighting Groups, i.e., upon our system of organization.

When we have completed the organization of the Minor Combat Units, each one to be so organized as to obtain the maximum degree of functional utility as a unit, in which equipment is the major consideration that determines our conclusions, if we consider the system of combination and control by which these minor units can be made most effective in combat to assist each other, the system that will best insure the absolutely necessary *flexibility* for the constantly changing *Fighting Groups,* then we have a rational basis on which to form our conclusions as to the organization of Major Combat Units, such as the battalion and the regiment. With the organization of these Major Combat Units, thus determined, we have a basis for data on road spaces and composition of minor and major combat units on which to base Organization Tables for the *Grand Combat Units,* such as the brigade, division, and the army corps.

The variable *Fighting Groups,* whose component Minor Combat Units are constantly changing according to the varying phases of the combat and which do all the infantry execution upon the enemy, are the controlling factors in actual combat; and the fundamental tactical consideration is to facilitate the control of these changes, by the nearest competent commander, with the very least possible delay.

Any artificial organization of the infantry which displaces the natural groupings into which these Minor Combat Units fall during an advance under fire, and which compels the officer at the front to delay action in order to secure authority from the rear, is an erroneous form of organization—a faulty system; and any artificial system that forces the crews of important Minor Combat Units to the point of physical exhaustion in order to maintain a fixed place in the formation, or exposes those crews to murderous losses because of their heavy and awkward loads, is a faulty form of organization. Such a fault, for example, results from the assignment of automatic rifles and their heavy ammunition loads to infantry companies. Either the crews are physically exhausted trying to keep up over difficult country or they are picked off by enemy fire just because they have kept up with the infantry and in doing so have been compelled to expose themselves a great deal more than the infantrymen, because their burdens do not allow them to take equal advantage of cover and do compel them to walk upright where the infantryman can crouch, crawl and creep. The same thing is true, and in a higher degree, of machine-gun crews, Stokes-mortar crews and one-pounder crews.

As the advance continues, if these burden-bearers are compelled to keep up with the infantry, they become physically exhausted or they get killed. The better they are, the finer their spirit and determination, the surer these results are. The explanation of the machine-gun losses of the First Division in the Soissons operation is here. Captain Patch says, pages 145-146, August, 1921, INFANTRY JOURNAL:

At the end of four days' severe fighting 80 per cent of the personnel were casualties and approximately 85 per cent of the material destroyed or aban-

doned. It was an appalling loss (greatly exceeding proportionally the infantry losses), but might have even been justifiable had that personnel inflicted fearful execution and annihilation upon the enemy. On the contrary, not a single gun team in the entire division could claim to have expended more than 200 rounds of ammunition during the entire engagement. . . . The pith of the whole trouble lay in faulty organization.

We shall fall into error if we limit our consideration of the subject to any one auxiliary; it is all of the infantry auxiliaries, and all of them properly used together, each in its proper relation to the rest and to the infantry, that we must consider; not merely one of them, important as the machine-gun element may be.

The function of the infantry is to gain and hold the terrain and the formations formerly held by the enemy, in spite of his resistance. In the discharge of this function the infantry employs three kinds of action—horizontal fire, curved fire, and personal combat. In the discharge of this duty, the hardest of all, the mission that incurs 85 per cent of all losses and inflicts 85 per cent of all losses of the enemy, the mission that gains the ground, there must be some element capable of moving forward in the night or by the day, across streams without bridges, through tangled woods, abattis and wire entanglements, in mud and rain, up or down mountain sides, regardless of enemy resistance or fire, regardless of any physical obstacles whatever, until it reaches the objective and prepares to hold that objective against counter-attacks by digging in in the best formation possible. This element cannot possibly carry any bulky article or any heavy weight. Its equipment must be determined by the conditions named. In action its actual equipment is so determined, regardless of all Tables of Organization, of all orders and of all other considerations. If this element of troops does not strip down to what it can carry, man by man, under these conditions, and still fight, man by man, it fails in its mission. It always strips. American soldiers throw away surplus impedimenta.

This element is *The Infantry*. Its Minor Combat Unit is whatever group of such men so equipped can be kept together under one commander; the squad of the drill books does not exist within this zone of combat. Any group of infantrymen who find themselves together constitute the squad of combat, and if any man in that group develops battle leadership he becomes its commander. If no such leader be developed, the group disintegrates. Some of its members join groups that have real combat leaders; some get killed; some drift to cover and stay there; a very few go on their own personal initiative —the natural scouts who have the instinct for individual fighting. Probably a group about the size of a company is the largest such group that can be handled by a single leader in combat.

This element of troops supplies its horizontal fire with its infantry rifles. Its curved fire is supplied by hand grenades. Its combat weapon for personal combat is the bayonet. It digs in with some sort of an intrenching tool. Each man carries his own food, his own water, his own ammunition, his own bedding, his own supplies of every description. Every man in the group should have exactly the same equipment, the same uniform, and the same

general appearance as every other man, because any distinguishing mark or difference of equipment that can be noted by the enemy will infallibly lead to his becoming a casualty in a short time. This element—*The Infantry*—goes prepared to maintain itself under these conditions until it be itself destroyed or exhausted and replaced by other troops. It is the only element that always goes in to fight to complete exhaustion. The squad of the drill books makes a very convenient unit for barrack administration and for road work. It never exists intact for any length of time in battle, for casualties commence from the first moment and continue until this element of troops is completely exhausted.

The fundamental basis of Infantry Drill Regulations, the fundamental basis of infantry doctrine as taught in the past in the American Army, is the integrity of the squad. This point is emphasized over and over again in all the texts on that subject. The present proposal may appear to be opposed to that doctrine, but in reality it is not so opposed. It is opposed to the creation of an artificial squad whose integrity cannot be maintained because the fundamental principle of independence of function is violated in its organization.

The squad of the Infantry Drill Regulations that existed when this doctrine was first promulgated was a homogeneous squad. The doctrine was then correctly applied. The squad of that organization did then constitute a homogeneous Minor Combat Unit, because all its members were equipped alike, all fought in the same manner, by the same methods, and all could be kept under a single command at one point on the field of combat, in the execution of a single mission.

But the squad adopted in France for the A. E. F., and thence in the whole American Army, is not now a homogeneous unit. It does not have all its members fight in the same way. Some fight as infantrymen, with rifle for horizontal fire, hand grenade for curved fire, and bayonet for personal combat. Others fight with an automatic rifle, which requires team organization by three or more men in order to remain in the combat for more than a very few minutes, during which time each member of the team must perform a highly technical function resulting from special skilled training in order to keep the utility in action at all. Others fight with a rifle grenade thrower, and though one man may carry the weapon and a few rifle grenades, if it is to hurl any considerable number of grenades there must be one or more additional men acting as members of a team in order to maintain the supply of ammunition. Most of these technical specialists are so equipped and carry such different loads that they stand out in combat very clearly differentiated from the straight infantry soldiers to the observer. The moment an advance over difficult ground begins, or advance over any distance at the top speed begins or advance by creeping or crawling is necessary, these technical specialists are immediately differentiated to view on account of their different equipment. They stick out in the formation like a sore thumb on the hand. As soon as the physical exertion begins to produce fatigue this differentiation becomes more marked. Selection of the stronger men for the duty does not solve the problem. It makes these men even more conspicuous in the combat line, and that alone causes these selected men

to become casualties early in any advance under infantry or machine-gun fire. Then these utilities are lost, because the equipment is wholly or partly lost, the selected stronger men are lost, the skilfully trained specialists are lost —casualties—and these different parts of the infantry squad therefore fail to function according to plan. The few who are not thus turned into casualties fall behind from fatigue as a rule, and the task of preserving the integrity of such a complex group is beyond the capacity of any combat leader. It is not the sort of an infantry squad of which the doctrine was written. The *doctrine of integrity of the squad* is sound, but its application in this case is erroneous.

This discussion seeks to bring about return to a homogeneous infantry *Minor Combat Unit*—whether or not it be called a squad—and to propose the necessary supplement to the old, sound, reliable infantry doctrine—*the integrity of the squad*—that is made necessary by the adoption of so much additional and complex infantry equipment, and the introduction of team organization as one of the elements of infantry combat. The introduction of such new elements cannot but have profound effects in many ways. It is a part of wisdom to consider these questions carefully, and while we must adhere to all the old, sound, proved landmarks and doctrines, we must be careful to avoid being deceived by mere nomenclature, avoid being betrayed by a mere catchword, avoid trying to force an old construction upon a new condition to which the old does not apply. It is proposed herein to hold fast to all that is good in the old and to accept well-demonstrated extensions of infantry doctrine made evident by sound theory, careful study and by actual demonstration in many hard combats. In this discussion, the essential new proposal is *the doctrine of fighting groups.*

(*To be continued*)

Newspaper Headings

"Army Suffering from Prussianism."—But the ailment does not compare with what Prussianism is suffering as the result of the little jaunt of the Army to France in 1918.

—

"Monocle Gains Favor."—England is getting even with us for introducing chewing gum over there.

—

"Return to Normalcy."—All we need is the announcement that the Honorable W. J. B. is to reenter politics.

Suggestion for a Field Uniform

By Captain Hugh D. Adair, 20th Infantry

WORKING clothes are working clothes and dress-up clothes are dress-up clothes the world over, and it is no more reasonable to expect the soldier to present a neat, snappy appearance at parade, or in the evening after the day's duties are over, in the same clothes which he has worn while crawling through brush or marching along dusty roads, than it is to expect the bricklayer, the contractor, the surveyor, or any other outdoor man to look cleaned up while wearing his working clothes. True, we have our fatigue clothing of overalls and jumpers, but they are for use in garrison only.

It is believed that our Army needs a serviceable field uniform, one designed solely for field service without regard to snappy appearance. The latter can be built into the dress-up clothing to any desired extent but should not be allowed to interfere with the efficiency of field service clothing.

Starting at the bottom, let us consider the question of foot gear. It is a subject which cannot receive too much attention. We doughboys, if history records us truly, do not cover ground much faster now than our predecessors did in Caesar's day, and it is time we showed some improvement. Hob nails have come to stay. Experience shows that even the stoutest hobs will wear out after a couple of weeks' steady hiking over hard roads, and the troops would wear through unprotected leather soles in much less time. As for the form of our boot, let us look to the timber cruiser, the prospector, the surveyor and the hunter, who, in common with the soldier, make long hikes over all sorts of country. All of those outdoor men wear the laced boot in preference to the shoe with legging. It is therefore recommended that the Army adopt a field service boot made on the Munson last with thick, hob-nailed sole and lacing with large, strong hooks three-quarters of the way up to the knee. This will be expensive foot gear and hard to fit properly, but its advantages will make it well worth the money and trouble. This boot should be worn over two pairs of sox, the outside pair of heavy wool to form a cushion for the foot, and the inside pair of light wool, of the present type, which will take up most of the perspiration and protect the skin from the roughness of the heavy sock.

Next we come to the breeches. The present type of breeches, while not wholly unsuited to infantry, was originally devised for mounted service, where a garment is required which is tight below the knee to facilitate the pulling on of boots, and loose above the knee to permit easy raising of the leg in mounting. The main objection to the present breeches is that they do not last. What the doughboy needs is trousers with a wide peg top allowing his legs plenty of room and ventilation, narrowing at the bottom so that there will not be too much cloth inside the laced boot; these trousers to be held up with suspenders rather than with a belt. A cartridge belt is always worn

about the waist, and one belt is enough, especially on a hot day. Above all, however, the trousers should be made of stouter material than the present breeches. Hard Bedford cord, double in the seat, inside leg and over the knees, is suggested. Of course, Bedford cord would be too hot in the United States and tropics in summer, but, needing as we do both light and heavy weight uniforms, our light-weight trousers could be of our old stand-by, cotton O. D.

Next on our mission of clothing the soldier from the ground up we come to the covering of the torso. The present O. D. flannel shirt has always given splendid service, under the coat in winter and as an outer garment in summer. It is hoped it will continue to do so for a long time.

And now for the field service coat. Referring again to the outdoor civilian who shoots and hikes, we learn from him what sort of a coat is needed; i.e., something on the style of a hunting coat. The skirts should be ample, extending half-way down to the knee, containing on each side a generous, inside bellows pocket in which can be carried notebooks, gloves, maps, and all the miscellaneous articles which accumulate in the pockets of the soldier. This long skirt should be split at the back, or along the side seams almost up to the belt, to make access to the trousers pockets easy. The coat should fit loosely on the shoulders and chest, and the two breast pockets should have front bellows, in order to hold as much as possible. A soldier cannot have too much pocket room. The openings to the side pockets should be low enough to escape being covered by the cartridge belt, and hooks, holding the belt up around the waist, should be let into the back seams of the coat.

The sleeves of this coat should be roomy and so inserted as to allow free movement of the arms, especially to the aiming position, which is not possible with the present coat. The right shoulder and both elbows should be reenforced and padded with shooting pads. Attention is called to the sleeves in the Australian uniform coat. They make the coat look like a shirt, but they look practical.

Next on our coat we come to the question of the collar. With our present stand-up and fit-close collar, our men cannot hike with packs, they cannot shoot, they cannot dig, they cannot do anything requiring exertion, until they have unhooked their collars or removed their coats. What the field service coat needs is a collar which will lie down out of the way during spells of heat or hard work, and which can be buttoned or hooked up closely to keep the neck warm and dry during inclement weather.

The front buttons on the coat should be covered with a fly which will guard them from catching against equipment, etc., and from being torn off. The coat should be made of a harder surfaced and stronger material than the present uniform and should fit loosely enough to allow the wearing of a jerkin underneath it in cold weather.

Now for the head gear. We can depend upon steel helmets being standard equipment for all armies in the future, and the question to consider seems to be what head gear is to be worn when it is not necessary to bear the weight of the helmet upon the head. One solution of this problem would be to have a light-weight helmet made

of papier mache or other hard surfaced composition which would shed rain and give protection from the sun, and over which the heavy steel shell could be fitted and clamped down when needed. This would save the trouble of having to carry two separate sets of headgear as at present and would also save the trouble of placing the overseas cap in the pocket when the helmet is worn.

Reports have been heard that experiments are being made with a combination overcoat and slicker, and, while a waterproof overcoat is certainly needed, it is not believed that the lightweight slicker can be dispensed with for summer wear.

Uniformed as above described, and with our present equipment, our infantry will be the best and most efficiently clothed and equipped troops in any army in the world.

Disregard Advice of Military Experts

It is rather curious that the Committee on Appropriations, when deciding on the military policy of the country, should feel justified not only in disregarding the advice of every one of its professional advisers as to what is actually necessary to a proper state of military preparedness but should go a step further, and, although there are members of this body of men who within four years had personal experience in actual warfare, they should assume to disregard the advice of those men also. Yesterday we provided for an insufficient number of regular officers, and the gentlemen who undertook to defend the position of the committee said we did not need them because we had the National Guard and our reserve officers. Today we propose to appropriate an amount which is absolutely inadequate to the training of reserve officers. (*Statement of Mr. Mills, of Massachusetts, on the floor of the House during the debate on the Army Appropriation Bill for* 1923.)

Military Errors of Russia[1]

By General Theodore Rostovtzeff, Formerly of Russian General Staff

THE RAPID dissolution of the Russian front in 1917 and the inability of the Russian Army to secure a decisive success in the theater of operations before the beginning of the revolution were the results of military errors in organization and strategy. I will point out briefly the underlying causes.

I have taken part in two wars—the War with Japan and the World War—and have served in nearly all the commissioned grades of the Russian Army. I have been on the General Staff and at the front, where in 1916 and 1917 I commanded a regiment of infantry. Having seen things from above and below, I believe that I am able to treat this subject from an unbiased viewpoint.

RESERVE FORMATIONS

There was very little system in the organization of reserve units in our army. The first attempt toward the organization of such units was made during the Russo-Japanese War. The reserve divisions, made up of selected reserve brigades and sent to General Kouropatkine from the Volga region, did not give satisfaction as first-line troops because they were completely devoid of regular officers. Consequently there was a negative influence exercised on their instruction which tended to lower their efficiency in the performance of military duties. It was therefore decided that reserve units would be formed, for the most part, from regular units, as was done in other armies, principally Germany, the only exceptions made being the divisions disposed along the German and Austrian frontiers together with the rifle brigades and the Imperial Guard. As for the rest of the infantry each regular regiment was the parent unit of a reserve regiment, a supply company and a depot or replacement battalion which was employed in training and instructing replacements. The same scheme was carried out in each light battery with the exception of the supply company. As for division staffs, there was but one staff for each reserve division. The officers and men were assigned in peace time to the respective units of the reserve divisions, and their names appeared in the mobilization plans of regiments, batteries and division staffs. This was a paper transaction, however, for all officers and men so assigned remained in their regular organizations. It was thought that the *esprit* and the traditions of regular units would be transmitted automatically to the new units, in such a manner that these units would not be inferior to the parent units. What happened? First of all, the reserve regiments received fewer regular officers than the parent regiments. Then, too, most of the commanding officers of the regular regiments did not take into consideration the established duties of peace time but changed officers

[1]Translated from the French by Major Sumner Waite, U. S. Infantry.

as they pleased, assigning the least efficient to reserve regiments; consequently, officers joined these organizations under protest. Company commanders did the same thing in the formation of the companies of these reserve regiments, for they designated their least capable noncommissioned officers and men to make up these organizations.

Finally, the second in command of the regular regiment became the commander of the reserve regiment. This new commander, in peace time, had practically no dealings with the future officers and soldiers of his regiment—he did not command them. His active function, as future commander of his regiment, was limited to drawing up the plan of mobilization for his regiment—useless paper work. In the active regiment to which he was regularly assigned he was president of all sorts of boards, courts, etc. At mobilization he became the commander of officers, noncommissioned officers and men whom he did not know and who likewise bore the same relation toward him.

Most of the reserve divisions went to the World War very poorly equipped. The regiments were short of machine guns, rolling kitchens, and were not sufficiently trained. These divisions were sent to all fronts—even to the German front—where they suffered constant defeats, losing their best regular officers who bore the brunt of these unfortunate battles. Such organizations were unable to stand the strain of active service.

This state of affairs explains the inferiority of reserve divisions in comparison to regular divisions. My personal experience taught me that the German Landwehr was in nowise inferior to regular troops. With us it was just the contrary and, even though the inferiority between regular and reserve units was most pronounced, the reserve organizations were assigned the same tasks as the regular units.

Generally speaking, regular divisions which had not been used to form reserve units were better than those divisions which had been so employed. This was particularly noticeable after one year of war, for the former were able to muster forty regular officers while the latter had from twenty to twenty-five. I had occasion to personally note the superior qualities of the 11th Corps and the 4th Rifle Brigade, both of which had not been required to form reserve units.

How should the regular regiments have been organized to avoid these practical errors?

Organize in peace time a supplementary battalion in each regular regiment of infantry. Place in command of this battalion the future commander of the reserve regiment and assign the number of officers, noncommissioned officers and men required by the peace-time organization. Consider this battalion as a separate organization, although a part of the parent regiment, and give it the best training possible.

On mobilization such a battalion could be very easily enlarged and transformed into a regiment. If this process had been followed, there would have been units equal to the regular regiments. This scheme would have done away with the haphazard assignment of officers, noncommissioned officers and men.

An organization of this kind was proposed to General Soukhomlinof

(Minister of War), but he disapproved it. He was a cavalryman and consequently was more or less unfamiliar with the infantry, and then again he desired to faithfully imitate the Germans.

OFFICERS AND NONCOMMISSIONED OFFICERS

The Russian officer was the principal support of the army. This fact was frankly and courageously affirmed at the end of the Russo-Japanese War by that brilliant Russian military writer, General Martynof.[2] Not only did the morale of our army suffer by the loss of our regular officers but also the instruction, for there was no one left to train and educate recruits.

It is necessary to go back to the reign of Nicholas I and even before his time in order to cite instances where noncommissioned officers carried out the responsibilities of officers. During this period the service of the soldier was for twenty-five years, and there was practically no difference between the education of the country squire and the peasant. In recent years the attempt to secure noncommissioned officers by reenlistment was unsuccessful. The best elements of the army, such as the well-to-do peasant, did not reenlist. Those who remained were poor material, without backbone or initiative, who did not enjoy the confidence of the men. They were able to exert their authority only by rigorous measures. Some of them, it is true, were brave old soldiers, but their advanced age and lack of military training made it necessary to assign them to administrative duties; consequently their value to the army was not of the highest.

The regular Russian army officer came for the most part from the third estate and the *petit bourgeois*. It was necessary to spend two or three years in a military school after having passed through some secondary school such as a gymnasium, college, or the Corps of Cadets. The regular officers of the Russian Army were excellent. They knew their business, were disciplined and patriotic, though they might be reproached for a slight lack of initiative and independence of opinion. This was more evident among those occupying the higher grades. The revolution showed that most of the regular officers, even in the higher grades, were not particularly cognizant of social and political questions, though many of them had acquired a large amount of military experience during the Russo-Japanese War.

The most absurd accusation ever made against our officers was that of cruelty. It is true that the Grand Duke Nicholas instituted, during the war, punishment by flogging (not more than 50 blows), but only regimental and superior commanders could order this punishment, which was inflicted only in exceptional cases, in which the sentence would have been death or hard labor for such crimes as theft, selling of arms and munitions, desertion on the field of battle, etc. As a matter of fact, in many army corps there was not a single condemnation to death during the entire war.

The relation between the officers and men of our army was a patriarchal re-

[2]General Martynof and his pilot were made prisoners by the Austrians at the beginning of the war during an airplane reconnaissance. Their capture was due either to an accident or shortage of gas.

lation which, because of the lack of education and discipline of the Russian people, obtained very good results. The Red Army replaced this patriarchal relation by strict formality and the most rigorous application of the "Statute Disciplinairie" of war time. The firing squads were used in cases where old officers would have confined their punishment to that of the paternal variety. The accusations of cruelty with which our officers were charged are unjust, for during the war they gave their best and fought for the glory and integrity of the country which finally disowned them.

There were very few reserve officers in Russia. It was rare indeed for an officer to leave the military service before having acquired the right of a pension on retirement; consequently the reserve was made up mostly of old men who, on being recalled to active duty, rendered valiant service in both the reserve and territorial formations. Unfortunately all reforms which provided means for augmenting the number of reserve officers were always sidetracked because of financial considerations.

In addition to the active officers of the army there was another grade called Reserve Ensigns. These men, for the most part, were well educated and had served one year during peace time (their education giving them the right to shorten their army service). They had also taken their examination for a commission. These officers were the recipients of great praise during the war, for their education inspired confidence and respect. After a few months of war many of them were detailed with the staffs of regiments, divisions and corps, where they discharged their duties honorably and often with distinction. As instructors and trainers of troops they were not quite up to the regular officers, but as members of the war machine they were, after some months, practically the equals of the regular officers. When the revolution broke most of these men fought tenaciously against the corrupters of the army. Thus the regular officers, as well as the reserve ensigns, in the Russian Army were at their best. Democratic by nature, they were bound to their soldiers. Unfortunately, however, their numbers were infinitely too few.

In peace time most of the infantry regiments, even those scattered along the western frontier and garrisoning small posts (as was the case with most of our regiments), were short from fifteen to thirty officers out of an authorized number of 110 officers per regiment.[3] What measures were taken to counteract this evil? None. It had been planned to inaugurate new military schools, but the plans were never carried out.

In a word, the greater portion of the Russian infantry went to war short of officers. The vacancies were filled by reserve ensigns who had performed military service in peace time. Unfortunately, the major portion of these men were killed, wounded or made prisoners during the first months of the war. Their loss affected the entire army. The great increase in the number of staffs caused by the augmentation of the number of army units and

[3]Before the war there was a shortage of 3,000 officers in the Russian Army. ("Mobilization of the Russian Army, 1914," General Dobrorolsky, Chief of the Mobilization Bureau, General Staff.)

other institutions in the Zone of the Interior demanded educated men. Comparatively speaking, there were few educated people in Russia, for out of a population of 180,000,000 not more than 3,000,000 men of all ages had received secondary and advanced instruction.

SACRIFICE OF OFFICERS

Although the Russian Army was extremely short of officers, the high command did not spare them. Even if Germany planned to fight the battle on the western front with first-line troops, Russia could have no such illusions.

Since it was known that there would be a long war, it was necessary to economize forces. In consequence, our military plan was to retreat. The author of this article served on the Staff of the Military District of Kiev when General Alexeef, the future commander-in-chief, and later his assistant, General Dragomirof, were, respectively, chiefs of staff. I can certify that no military problems were given to staff officers concerning operations in Austrian territory. All map problems were solved on Russian maps. The chiefs of the General Staff employed the same procedure when they came to Kiev in order to draw up the necessary plans. The fact that the war was to be one of great length made it most necessary that plans should be evolved to conserve the vital part of Russia's military power, the regular officer.

But this conservation was not carried out. The Russian infantry went to war with from four to five officers, including reserve ensigns per company, the result being that in 1915 the company commanders were young ensigns who had had a brief course in military schools and who, for the most part, had received instruction in the gymnasiums and colleges. This element, though very good, was not sufficiently trained.

After the offensive of General Broussilof in 1916 the 136th Regular Infantry, which I commanded, had no more than ten regular officers, two of whom were on the regimental staff and eight assigned to companies. When in January of 1915, in the Carpathians, the corps commander ordered the relief of the commanding officer of the 238th Regiment of reserve infantry and his replacement by a more energetic officer, the commander of the 60th Division replied: "There are no superior officers in this regiment. There is but one captain. He is on sick report and has very little energy. As for the division, there is but one lieutenant colonel. He has been in the retreat, is rather old, and arrived a short time ago from Russia."

The commanders-in-chief of the various fronts were thoroughly cognizant of this vital shortage of officers. Because of this sad state of affairs, they unanimously protested against the order published in the spring of 1917, which on the one hand was designed to please the Allies and, on the other, to deceive them. They were ordered to expand a regular division so as to form an army corps; in other words, two and one-half new divisions would be created from one old division.

At that time Gourko was Chief of the General Staff and had replaced General Alexeef, who was on sick report. It was he who insisted on the formation of these divisions, which were

dubbed "Troisièmes." I have stated "in order to please the Allies and in order to deceive them." Here is the basic reason. The Allies, and above all, France, found that the Russian Army did not have a strength proportionate to the number of inhabitants. General Gourko wished to please the Allies and formed these new divisions, concealing from them the fact that these divisions were not absolutely *new*, for the officers, men, reserves, guns, machine guns, rolling kitchens, and wagons were taken from the old divisions. There were really no new formations, simply the old ones divided up. In fact, the artillery was unprovided with guns throughout the war.

These formations were the beginning of the end. The regiments had from three to five regular officers. What could they do with the large number of young officers in these new formations who came from a class of little education and were easily influenced by propaganda? They did not wish to continue the war and inculcated their men with revolutionary ideas. Only in organizations where regular officers had been retained in larger numbers, such as in the artillery and in the cavalry, was any semblance of order maintained. The organizations so officered held out longer and only disappeared under the influence of the masses of revolutionary infantry. The little considerations manifested in the conservation of the Russian officer is shown by the total absence of measures to accomplish this end. High command was confounded with the idea that Russia had a large population. But the length of the war demonstrated that the density of population and its degree of education played an infinitely superior rôle to that of absolute numbers. Rich in population, Russia was extremely poor in the intellectual classes which supply good officers. The high command encouraged heavy losses in the infantry. When there were heavy losses decorations were given, but when there were small losses those responsible were reprimanded or dismissed. It was considered that they had shown a lack of energy, will-power and perseverance. The high command did not understand that men went bravely on to their death only when they were led by officers who were the first to fall. Ludendorff complains that the attack, once commenced, did not stop in time when it was evident that the enemy had the best of it. This was habitual with us.

If it is an exaggeration to call the Carpathians "the graveyard of Russian officers," it is nevertheless true that it was a costly experiment which materially decreased their numbers. The Broussilof offensive of 1915, which was carried out under the most vigorous measures of the Commander-in-Chief, witnessed the loss of nearly all our regular officers. This offensive was badly planned and was supported by insufficient artillery. The principal attack was in the direction of Vilna, where practically all our forces were concentrated. Once more the officers carried the brunt of the attack.

After the Broussilof offensive there were practically no regular officers left. A few units had conserved their officers. Most of them, however, had been wounded several times, but they still remained faithful to their trust.

The shortage of regular officers was manifested after the first three or four months of the war, when an effort was

made to form a battalion within a reserve regiment as an independent tactical unit. It was necessary to employ the entire regiment or nothing at all. The same thing obtained in the regular regiments after the first six months of war.

SACRIFICE OF NONCOMMISSIONED OFFICERS

The same lack of concern which was manifested toward the conservation of officers existed at the beginning of the war in regard to our noncommissioned officers, who in peace time had been well trained and disciplined.

All reservists of a certain age were called out on the declaration of mobilization on the same footing—that is, the noncommissioned officers were in the same category as the private soldiers. The last classes were called out at the beginning of the war as having been the last trained. The noncommissioned officers of these classes constituted a most precious asset, for among them were many who had acquired their experience in the Russo-Japanese War. In some cases companies went to the front with at least half of their effectives made up of noncommissioned officers. In all cases the number of noncommissioned officers exceeded the number prescribed for a regiment. Such an army was naturally well trained. The using up of this valuable personnel complicated the matter of training and educating replacements, causing the entire burden of training to fall on the exceedingly small number of regular officers.

REPLACEMENT BATTALIONS

The training of our replacements was not satisfactory. All went well at the beginning of the war, when replacements were made up of men trained in peace time and who had not forgotten the art of soldiering. But later, when our losses began to be felt and replacements were composed of untrained men, the regiments often received replacements who were unable to load their rifles. This was due, in a great measure, to the fact that battalions supplying regular regiments during mobilization did not send replacements to the proper organizations. They went anywhere (the Imperial Guard being the only exception). The relation between regiments and their replacement battalions was severed; consequently there was no longer a common interest between the two. Under these conditions the regimental commander did not send to his replacement battalion instructors who were experienced in battle, because it was not for the interest of his regiment. Often the regimental commander made urgent request to obtain the officers whom he had left with his replacement battalion at the time of mobilization. However, no matter how much he insisted, he never got them.

The officers of the replacement battalions, having lost contact with their regiments and being away from the influence of their comrades and not subject to the discipline of their regimental commanders, did not hesitate to employ every possible means to avoid being sent to the front. Even the underlying principle of the system was wrong.

There was yet another result of this system. Noncommissioned officers and men who were discharged from hospitals and sent to the nearest replacement battalion never rejoined their regiments. No attention was paid to requests of this nature, for it was argued that if these requests were granted it would

lead to confusion and overcrowding of the railroads. For these reasons the personnel of the regiments was constantly changing. Only the officers who had taken part in the glorious actions of the regiments remained to carry on the regimental traditions. The brave noncommissioned officers and men who left their regiments, wounded or sick, never returned. It is therefore very easy to understand the mix-up and the useless correspondence which ensued when it became necessary to decorate or pay a wounded or sick soldier. In the French Army 82 per cent of the wounded was returned to the regiments. It was manifestly impossible for us to apply the straight territorial system as existed in France, England and America, where the same routine sufficed for the entire war machine. If we had done this, it would have been necessary to form regiments of Mordvas, Sirans, Bachkirs, Bouriaces, Kalmouks, etc., etc. These people were practically uneducated, and there were scarcely any of their own people who had the military education to become officers. The Russians did not understand their languages, therefore it was impossible to form territorial regiments. Such formations would have resulted in their immediate capture by the enemy. It became necessary in these cases to form a quasi-territorial organization—that is to say, create two kinds of replacement battalions—one in proximity to the advance zone and the other the local battalion, the former having for its mission the final training of replacements of two or three local battalions and which would be under the control of the respective division commander. Do not forget this fact—the reserve divisions were not supplied with the replacement battalions. With this system the same number should have been given them as was given the regular divisions.[4]

In order to remedy, as far as possible, this system, regimental commanders organized, during trench warfare, their own replacement battalions in the vicinity of their regiments. These were used as training centers for men, especially for recruits. Noncommissioned officers were trained by instruction detachments as in peace time.

This system gave good enough results from the standpoint of training but was insufficient for all-round military education. By nature, the Russian is poorly disciplined. It is necessary to train him a long time and to give him a taste of barrack life in order to ground him in the rudiments of discipline.

Warlike scenes, proximity to the enemy, the countryside, which reminded him of his own home, etc., served as drawbacks in giving the Russian soldier the proper amount of military education. The men who came from replacement battalions were, if necessity demanded, placed in ranks, for it made no difference as to their state of training since there was always a shortage of effectives. Because of these facts, regiments were always under strength during a battle.

[4]General Dobrorolsky blames the shortage of permanent effectives of regiments to the defective organization of our system of replacement battalions established in peace time. Our mobilized army had only 188 replacement battalions while the grand program called for 500, consequently our shortage of effective replacement battalions improvised in war time did not accomplish their mission, for some 10,000,000 able-bodied men were *embusqués* in the Zone of the Interior.

A proper allocation of replacement battalions in reference to the railroads was not worked out so as to supply their respective divisions and corps. A close relation did not exist between the replacement battalion and the regiment. Replacement battalions at a distance were, toward the end of the war, placed under the command of their respective division commanders, who made no pretext of administering them. It was, after all, a reform on paper, for it was manifestly impossible for the division commander to leave his division and inspect his replacement battalions.

SERVICE OF REPLACEMENTS

The Russo-Japanese War demonstrated the fact that the question of infantry replacements during battle was one of the most important factors in warfare. At the height of the battle of Mukden, Japanese prisoners stated that their companies were practically complete while ours were about one-half strength. It would have seemed that this lesson would have served us well during the World War, but it was not so.

After the conquest of Lwof, September 11, 1914, the lack of replacements was keenly felt. The Russian Army, under General Ivanof, was unable to pursue the Austrians through the Carpathians because of the shortage of men. Even when the Austrians occupied Pérémychl and moved beyond the Carpathians, nothing was done to correct this state of affairs. Our ranks were not filled, and the entire Eighth Army, which was in reserve, did nothing. The most favorable moment in the entire war for the Russian Army was lost. The 60th Reserve Division received its first replacements to the number of 120 men per regiment and then only after the Galician battles. The severest engagements at this time with the Austro-Hungarian Army took place beyond the Carpathians, November 6, 1914.

In 1916 General Alexeef ordered that each regiment would be followed by a replacement battalion. This common-sense order was not carried out. In the rear, the towns swarmed with soldiers, and at the front we fought with half our effectives.

THE ASSIGNMENT OF RESERVISTS IN ACCORDANCE WITH AGE

The plan of mobilization in the Russian Army did not provide a rational distribution of men according to age. Reserve formations were composed of older men than the regular units, and yet their mission was the same as that assigned organizations of the permanent establishment.

After 1916 the old soldier disappeared from the first-line troops. Only the very young soldier was in evidence, such as conscripts and territorials of the second category, who did not come in contact with the moderating influence of the older men. The latter were found more in organizations serving in the rear echelons. That explains why these organizations hung together after front-line units had been practically broken up. The older men predominated in the territorial divisions and consequently were envied by the regulars.

(*To be continued*)

Automatic Fire—A Comparison

By Lieut. Colonel Jennings C. Wise, F. A., O. R. C.

BY REASON of the fact that the automatic weapons with which the infantry and cavalry in the American Army have been equipped have not possessed the capacity to sustain automatic fire for long periods, the view prevails more or less generally in the United States that long-sustained automatic fire is not of paramount tactical importance. In other words, tactical methods have adjusted themselves to the available weapon, and no particular tactical value is attached to a weapon with a fire efficiency in excess of the requirements of the tactical methods in vogue.

This is not surprising. Apparently it is inevitable in the evolution of the science of warfare that the force of inertia should resist change in tactical methods. The military man clings to old, familiar forms. Mechanical innovations that threaten these forms seldom interest him at first. Therefore, ordinarily it is only in war, under the compelling force of necessity, that tactical amendments are made to meet the most revolutionary developments in the machinery of war that occur in peace time, and almost invariably we find that the new weapons which come to light in time of war have long been known, but that they were either wholly ignored or tried and rejected before finally being adopted. This was true of the first rifled field gun, the first breech-loader, the first automatic weapon. It was true of the first submarine and the first tank.

Today there are extant two leading systems of automatic gun construction. One is the American gas-operative system, the other the Madsen or Danish recoil-operative system. France, after five years of bitter experience with automatic weapons, has adopted the latter, it being believed in the French Army that all other considerations in the case of an automatic rifle, including cost, and weight within reasonable limits, is of secondary importance to the ability of the weapon to be fired by the average soldier when its fire is wanted and as long as it is wanted. Thus it is seen that the desire for increased fire capacity has largely governed the French choice of the Madsen in lieu of the Browning rifle, and this after long and careful tests and deliberation over the results.

It may be that the gas-operative system to which the American Army clings possesses such peculiar technical superiorities over the recoil system as to render the gas-operated gun more desirable than the recoil gun. The tactical advantages of the latter would seem to be very great, however, and while it is with these that this article is primarily concerned, the technical characteristics of the two standard weapons must first be compared in order to develop the tactical applications of their fire.

Under the gas system the fire capacity of the weapon is directly limited by the metallurgical characteristics of the steel tube comprising the barrel. No matter how perfect the operating mechanism may be, the gun may not

continue to fire beyond the point up to which the steel of the barrel will resist the heat generated by the friction of the projectiles and the explosive that impels them. This heat develops so rapidly and so suddenly that long before the barrel has reached the limit of its capacity it cannot be removed with the bare hands, or except with special tools, which is an operation requiring special knowledge and training as well as a considerable amount of time during which the weapon must remain silent. Experience shows that the replacement of a barrel for which special tools and knowledge are required is impracticable under battle conditions, however readily it may be accomplished on the range or in the laboratory.

The alternative of replacing the heated barrel is water cooling. In the case of an automatic rifle, or a weapon capable of being borne and operated by a single man, water cooling as a means of maintaining the weapon in action is utterly impracticable. Consequently, it is a fact that a gas-operated automatic rifle has a very limited fire capacity.

Under the Madsen recoil system the limitations which a single barrel would impose upon the rifle are circumvented by the ready interchangeability of barrels with the bare hands and without tools. For structural and mechanical reasons this is possible only in the case of a recoil gun, the breech parts of which are not affected by the heat from the rearward gas escape which is essential to gas-operated guns. The interchangeability of the barrels does away entirely under all save the most extraordinary conditions with the necessity for water cooling.

The practical results of the perfected recoil rifle are most important. While the Browning rifle has a comparatively limited continuous-fire capacity, the Madsen rifle may sustain automatic fire indefinitely. Furthermore, while the force of recoil in the case of the Browning reacts in the form of a violent shoulder kick and a muzzle jump, which makes the use of a light portable bipod and butt rest impracticable, in the Madsen rifle the force of recoil is almost wholly absorbed in the operation of the breech mechanism, so that the rifle, though no heavier than the Browning, may be operated as a machine rifle and thus attain a stability and accuracy of fire approximating that of a machine gun.

Exhaustive tests have disclosed very definite characteristics of the fire which the two rifles are capable of delivering.

By reason of the instability of the Browning rifle it is far more effective when employed semiautomatically than when fired automatically. In other words, 70 rounds fired in two minutes will give more hits than the maximum number of rounds that may be fired automatically in the same time. On the other hand, 500 rounds fired in two minutes with a Madsen rifle will give five times the number of hits that are obtainable with 70 rounds in the same time. This fact is of the utmost tactical importance and is a clear indication that the full value of automatic fire has not been realized by the American Army by reason of the limitations of the weapon which with it is equipped. Thus, while it is readily admitted that occasions have been rare in the American Army when a single automatic rifle has been called upon to fire continuously for a considerable period of time, it is a grave error to assume that the ability of an automatic weapon to

maintain continuous fire is not of paramount tactical importance.

This fact is easily demonstrable by further comparing the characteristics of the Browning rifle with those of the Madsen machine rifle, and the possible methods of their employment.

The Browning rifle possesses a maximum fire capacity of about 400 rounds when fired continuously. At the end of three and one-half minutes, or the time required to fire this number of rounds, the weapon must be withdrawn from action for cooling. Even if a plentiful supply of water be available, a considerable time must elapse before the weapon can resume action. Sufficient water is not to be expected on the battlefield, nor is the movement necessary for cooling ordinarily practicable when the water is in fact available. Therefore, if a company of infantry, armed with sixteen Browning rifles, be called upon to resist a sudden attack, at the end of three and one-half minutes it will have exhausted temporarily its automatic-fire capacity after having fired a maximum of 6,400 rounds.

The Madsen rifle, by reason of the interchangeability of its barrels, possesses the power to maintain a continuous automobile fire indefinitely. No cooling facilities other than water portable by the gunners in canvas pouches, or even in their canteens, are required. Five thousand rounds may be fired by a single rifle equipped with one extra barrel, with one gallon of water. Ten thousand rounds may be fired by a single rifle equipped with two extra barrels, with the same quantity of water. The gun team can therefore carry the necessary quantity of water for any emergency in their canteens alone.

The normal rate of fire of the Madsen rifle is 200 rounds per minute. Consequently it requires but nine Madsen rifles to fire the same number of rounds in three and one-half minutes that sixteen Browning rifles can fire. Clearly, therefore, if the same volume of fire may be developed by a company of infantry armed with nine Madsen rifles that can be developed by a company armed with sixteen Browning rifles, in the same time, solely by reason of the ability of the former to maintain continuous fire, the ability of the Madsen rifle to fire continuously is of enormous tactical importance.

On the other hand, if sixteen Madsen rifles fire continuously for three and one-half minutes they will fire 11,200 rounds, or they will develop a volume of fire that is nearly double that of the volume developed by sixteen Browning rifles. The same ratio prevails during whatever lesser period the fire is maintained, so it is seen that with the same number of rifles and men, even while the Browning rifle is able to fire, the fire effect of a company armed with Madsen rifles is vastly superior to the fire effect of a company armed with Browning rifles, provided the accuracy of the fire of the two is the same. As a matter of fact, the disparity between the fire effect of the two is enormously enhanced by the superior accuracy of the Madsen when fired automatically as a machine rifle, which is its normal system of fire.

Now let us assume that the crisis of the attack persists for ten minutes, which is in fact a very brief period of exposure at close quarters for the advancing assailants. Even where the

necessary movement is possible for purposes of cooling, the Browning rifles cannot be cooled, cleaned, lubricated and resume action within that time. They must remain silent after three and one-half minutes. The sixteen Madsen rifles, on the other hand, having continued the fire with unimpaired effect, will have developed a fire volume of 32,000 rounds, equally distributed over the entire period, while the sixteen Browning rifles will have fired but one-fifth as many rounds and will have been silent, and therefore ineffective, during nearly two-thirds of the attack, or the stage of the attack considered.

Or if nine Madsen rifles and sixteen Browning rifles have been employed, the company armed with the Madsen rifles will have had a continuous fire effect during the entire period of ten minutes, with a volume of fire of 18,000 rounds equally distributed over the period, while the company armed with Browning rifles will have fired but 6,400 rounds and will have been silent six and a half minutes out of the ten minutes.

It may be argued that a far better effect may be had with the Browning rifles under the circumstances described by not resorting to continuous automatic fire, and that if all of the sixteen Browning rifles were not fired continuously during the first three and a half minutes their fire could be spread over the entire period. The fact remains, however, that the disparity between the volume of fire they would develop and the volume of the fire the nine Madsen rifles would develop would be enhanced, rendering them relatively even less effective although they were not wholly silenced. In such a case the sixteen Browning rifles would still fire a maximum of but 7,000 rounds at the most, while the nine Madsens would fire 18,000 rounds, the nine Madsens developing a volume of fire two and a half times greater than that of the sixteen Brownings.

It is also reasonable to conclude that, when the automatic weapons with which troops are equipped are seen to possess the power to fire continuously for long periods, tactical methods will develop designed to utilize their full effect. This fact may be illustrated.

At present infantry holding a position is wholly dependent upon auxiliaries to break up the formation under cover of an attack. With respect to the sudden formation of a counter-attack it is especially at a disadvantage, since there is seldom time to coordinate the auxiliaries before the hostile advance gets under way. Yet the best known way to repel an attack is to break it up while in the process of formation, or, failing in that, to throw it into confusion before it is launched.

An infantry that possesses within itself the power to bring the hostile assembly areas under a long-sustained, overwhelming fire, and still retain its fire power unimpaired with which to meet a resolute attack in its final stages, would possess an enormous advantage over infantry that must rely upon others to break up the formation of the attack. It has been shown that infantry armed with the Madsen machine rifle can develop a fire equaling that of heavy machine guns in volume and approximating it in stability and effect.

So far the tactical importance of the ability of an automatic weapon to fire continuously has only been considered with respect to fire effect alone. Let

it now be considered with reference to movement.

It is a tactical axiom that movement must be accompanied with fire. The fact is that movement in the face of strong resistance is only possible when covered by fire. It is fire, and fire effect alone, that makes movement possible under the conditions of modern battle, and until fire superiority over the enemy has been attained the hostile position will not be reached.

Heretofore, in the American Army, in theory movement has been accompanied by the fire of heavy artillery, light artillery, heavy machine guns, one-pounders, mortars, rifle grenades and hand grenades in the order named, with a more or less continuous automatic rifle and musketry fire. The failure of attacks to press home and a large percentage of casualties may said to have been due, as a general rule, where such failure did occur, to a lack of superiority of fire. In other words, the necessary forward movement in sufficient force was rendered impossible because the covering fire did not silence either the hostile batteries or the hostile parapets, or both.

The counter-battery problem need not be considered here. It is only with the hostile parapets, including machine-gun nests, that this discussion is concerned. Where they were not silenced the fact was due in large measure to the auxiliaries of the infantry—the supporting guns of the light artillery, the one-pounders, the heavy machine guns, mortars and the like. But let the facts be recognized. While the possibility of coordinating the fire effect of these auxiliaries with the movement of the infantry is in theory possible, any practical soldier of experience knows that at times it is impossible. They not only do not possess powers of resistance to wear and fatigue equal to those of the infantry, but they are less mobile, so that even when able to move forward they cannot keep pace with infantry moving at its most rapid rate. And this is true of heavy machine guns no less than of the others. Therefore it is evident that infantry must often rely wholly upon its own fire power to make its movement possible. Consequently it is of the utmost tactical importance if the fire power of infantry can be increased without reducing its mobility.

Infantry armed with automatic weapons capable of firing for long periods with but brief interruptions is necessarily possessed of a greater fire power than infantry armed with weapons that cannot sustain their fire, even if not one rifle be called upon to fire more than a few rounds at a time.

By way of illustration, let it be assumed that two companies, one armed with sixteen Browning rifles, and one armed with sixteen Madsen rifles, press forward to an attack. Leaving out of consideration the auxiliaries which may or may not be coordinated, the theory of the advance of the infantry itself is that one automatic team shall cover the movement of another, or that a portion of the automatics shall be firing while the remainder and the musketeers are progressing toward the objective. If that objective be a normal objective—that is, at a considerable distance held in strength—the progression will proceed at a rate not faster than 100 yards in two minutes. Meantime each of the sixteen automatic rifles in either company should, in order to be developing their maximum fire effect, be

firing half the time. Since the Browning rifles cannot fire continuously more than three and a half minutes, nor more than a total of four minutes in a period of ten minutes no matter how the bursts are fired, they will either be silent at the end of eight minutes or they will have failed to cover the advance with the fire of a portion of the total number, since periodic cessations of fire will not enable fire superiority to be maintained.

During the seven or eight minutes which the fire can be maintained, the advance will have progressed not more than 400 yards.

On the other hand, a portion of the Madsen rifles will have been firing continuously with maximum effect, and all of them will be able to continue to cover the advance, however long it may continue. Again the relative accuracy of the fire will enter into the fire effect of the two companies while both are firing.

From the foregoing it must be apparent that infantry which possesses within itself a fire power simulating that of heavy machine guns, and relieved of the difficulties of coordinating its movement with the fire of the auxiliaries, has an enormous advantage over infantry that must rely upon the accurate coordination of its movement with auxiliaries whose mobility is at best inferior to its own.

Some of the logical conclusions of paramount tactical importance that are to be drawn from the comparison between an automatic weapon that may be fired continuously and one that may not be are that with the former:

1. The same volume of fire may be developed with a smaller number of rifles.

2. The inevitable impairment of fire effect through casualties is reduced by reason of the smaller number of fire units exposed to casualty.

3. With the same number of weapons and personnel a vastly greater volume of fire and consequent fire effect may be developed in the same time.

4. An effective fire may be maintained indefinitely and is not restricted to a period which may be of shorter duration than the crisis of an attack.

5. The fire power of infantry and cavalry, when acting alone, is enormously enhanced.

The foregoing are conclusions not based upon conjectures but upon demonstrable facts—facts that have been demonstrated repeatedly by technical and tactical tests designed to develop them.

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Newspaper Heading

"Schoolboy Marries His School Teacher."—He will complete his education all right, all right.

The Doughboy

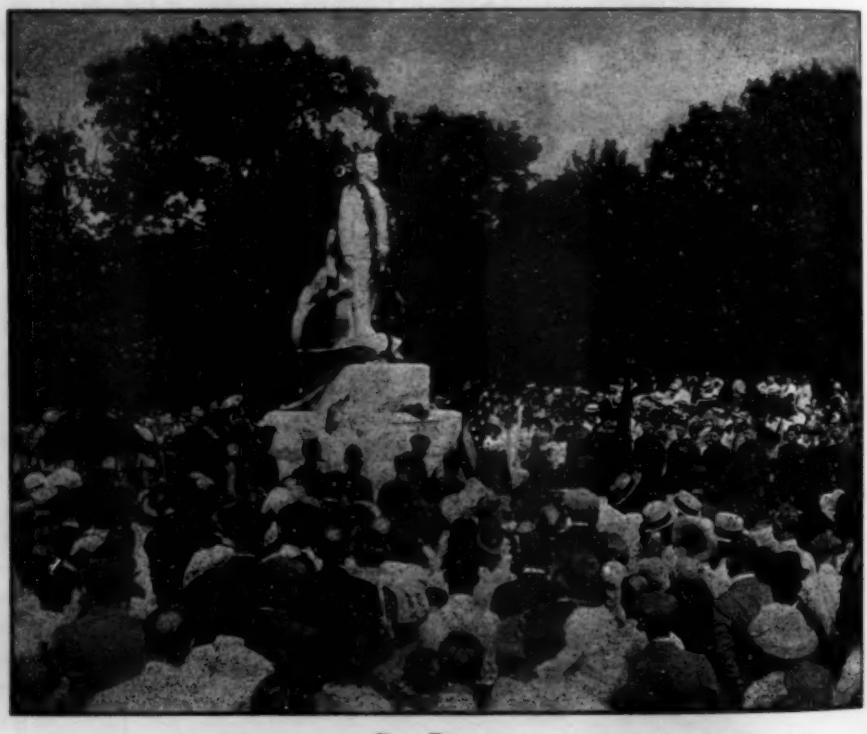
By Howard Philip Rhoades

THE millions of Americans who are veterans of the World War have been honored by an unique statue just dedicated at Black Run, Muskingum County, Ohio, a small place about 18 miles north of Zanesville, Ohio, carved by the farmer-sculptor, Daniel Brice Baughman.

Baughman, who is rapidly gaining recognition all over his native state for his remarkable work and personality, says "The Doughboy," as he calls his newest statue, is his masterpiece. He explains the inspiration of the great 35-ton mass of white lime-stone as follows:

I put all summer on "The Doughboy," working almost steadily from April 1 to September 1, because it represents to me something very vital and real. You will see there, in my Memorial Park, statues of Lincoln, Grant, McKinley, Sherman, McPherson, Garfield and Washington, but even feeling their greatness as I did, they were not carved with the same fervor and feeling as in the making of the "Doughboy."

My folks told me the roses needed trimming, that the fences were down, that various other tasks needed atten-



THE DOUGHBOY

tion, but I paid no heed. I was working on this statue and stayed with it until it was finished. To me "The Doughboy" was a creature I had seen, and known. In our own county, in our own town, in Newark, Zanesville, Hanover, Coshocton, and all the other towns around here I had seen him answer the call: the lad, strong, rugged, untrained, but willing and eager. Then I saw him come back, on leave, or on the final return, and then he was the boy like my statue. After thinking him over for months I quarried out the big block of stone, and the result is what I believe my masterpiece.

The man who thus explains his work is a most singular sculptor in the annals of art. Starting as a boy, "pecking away," as he calls it, in the great quarry on his father's farm, he has gone on, all his life, carving out statuary. Now, at the age of 45, he has turned the 5-acre top of the great hill of his father's farm into a Memorial Park. Here he has placed "The Doughboy" in the center, flanking it at distances of 100 yards or more with statues of Washington and Sherman. On lower levels around the sides of the hill, and in the farmhouses in which he and his father, now a man of 70, live, he has placed the five other large statues. Besides these are numerous smaller pieces representing famous men, animals and inanimate things.

Never has Baughman had a single day in any art school, nor has he read any work on art. He has simply gone on carving and working until now people come from all over Ohio to see his park, which is reached by a winding road which on fine days is lined with automobiles headed toward the Baughman farm. He hopes that one day the state or National Government shall take the place over and set it aside as a resort of quiet and rest for the men who have served, and for all citizens to pause and give a thought to all our brave soldiers and noble statesmen.

Destroying Fighting Efficiency

Mr. Chairman, in the remarkable career of that great American, Theodore Roosevelt, no one thing stands out more prominently than his unfaltering advocacy, in season and out of season, of the importance and urgency of national preparedness. If he were living today, I can well imagine his astonishment and disgust at the attitude of some of the leaders of his own party in so reducing the appropriations for the Army and Navy as to destroy the fighting efficiency of these arms of defense. . . . There are in this country today over a million people, mostly aliens, who believe in overthrowing this government by violence. The apostles of Lenin and Trotski, though not quite so noisy of late, are still at work. (*Mr. Dallinger, of Massachusetts.*)

The Champagne-Marne Defensive

By Captain J. S. Switzer, Jr., Infantry

(*Continued*)

THE order of battle for the American 1st Division, on the morning of the attack, was, from left to right, the 28th, 26th, 16th and 18th Infantry; for the 2d Division it was the 5th Marines, 9th and 23d Infantry. The 6th Marines formed a special corps reserve. The regiments were disposed in column of battalions echeloned in depth.

To each regiment were assigned four groups of light, fast tanks. Each group consisted of three batteries, four tanks to a battery. General Ludendorff claims this to be the first time that tanks of this type were used against the Germans. Their special features were their swiftness and their permitting of the use of machine guns above the standing crops of grain. Lines of these tanks were to precede the infantry assault waves.

Since the attack was to be a surprise, there was no artillery preparation or bombardment. The concentration of artillery, however, was heavy. In general the plan was to set down a standing barrage for a given length of time before each objective and to give the assaulting troops a rolling barrage. Owing to the confusion and congestion the night before the attack took place, the artillery experienced considerable difficulty in getting into position. In the words of one officer who fought in the battle: "It seemed to me as if there were just masses of guns lined up everywhere, pointed in the direction of the enemy and Berlin." The idea of using "assault batteries"—that is, batteries assigned to a regiment for the initial advance—was put to good purpose in this case.

The Tenth Army moved to the attack at 4.45 a. m. on July 18 with nine divisions in line, six in support, and six in reserve. The American front alone measured some 2,500 meters without the usual artillery introduction, but with an intense barrage and preceded by many tanks, the infantry went into action. Taken largely by surprise, the enemy offered little resistance at the outset, but his defense stiffened as the fight progressed. It proved insufficient to prevent the Allies from reaching all the first-day objectives on schedule time. The average gain in the Tenth Army sector was from 6 to 10 kilometers. Several thousand prisoners were taken, many of them officers. Machine guns and artillery were captured in proportion to their use. The Allied losses were severe also.

The 1st Division met stubborn opposition at times but overcame most of it immediately. The second objectives were reached by 7.30 a. m. In the reduction of the final objectives around Missey-aux-Bois, the Germans brought into play heavy machine guns concealed in the grain fields and artillery counter work. The French 153d Division was unable to progress so rapidly as the Americans and therefore did not keep abreast of the 2d Brigade. This delayed that brigade at the second objective. The enemy enfiladed it on the ex-

posed flank. In turn this held up the left of the 1st Brigade, which all the time had complete contact with the Moroccan Division on its right. By nightfall liaison with the French 153d Division had been restored, that division having come into line, and the final objectives were consolidated. There had been no serious delay or miscarriage of plans in the 1st Division on the first day.

The 2d Division, on the right of the 1st Moroccans, did not "get away to a good start." It had not the opportunity of reconnoitering its sector before going into position for the attack. The unusual circumstances and conditions surrounding the arrangement of the troops for the attack—that is, the confusion, the storm, etc.—caused units to get mixed up, misdirected, lost, and liaison and communication to work faultily most of the first day. One battalion was actually deploying when the opening barrage commenced. In spite of these difficulties the 2d Division possessed itself of all the objectives assigned to it. So rapid was the advance on Beaurepaire Farm that connection with the French 38th Division was lost temporarily. The farm was taken in fifteen minutes. Vierzy proved a stiff proposition, as did Harteenes Woods, and the final objective around Bois Lechelle was not attained until about 6 p. m.

Throwing into line additional troops, two divisions of which were first class, the Germans made determined efforts on the second day to stem the progress of the Allies. The surprise effect of the first day was past, also, so that the enemy was successful to a certain extent in this attempt. The Allied method of attack was the same as the day before. Again critical gains were secured from the enemy, but the average penetration was not so great. The reinforcements which the Germans were able to bring to bear rendered the situation more serious and difficult. Around Soissons, where the enemy based his resistance, the fighting was materially increased.

The 1st Division, facing more difficult terrain as well as larger enemy forces, advanced on Buzancy and Berzy-le-Sec about 4 a. m. Trouble was encountered almost immediately. The tanks were checked by the Ploisy ravine, so that the way was not so well prepared as upon the previous day, and in addition the machine guns in the ravine got in effective work against the 2d Brigade. This held up the 1st Brigade. Meanwhile the plateau east of Missy-aux-Bois ravine, held by the enemy, offered too stern a proposition to the French 153d Division, with the result that the 1st Division was blocked. Most of the morning was spent in reestablishing the lines and at the same time sustaining heavy casualties from concentrated enemy fire. In the afternoon the attack was resumed with better success, as far as Mont de Courmelles Farm to the western edge of Ploisy ravine and Chazelle. The casualties were many, but once more the toll of prisoners and guns captured was large.

In the center the Moroccans had kept pace with the 1st Division but failed to retain contact with the 2d Division on their right. The opposition and territory confronting them tested severely their well-known reputation.

Beyond them the 2d Division had both flanks in the air and experienced but little success on the 19th. To begin with, the troops holding the line east of Vierzy were too worn out to renew the attack at daybreak. The task then was given to the reserves, which failed to

arrive in position in time. After proceeding to Tigny under great obstacles, the division was compelled to seek shelter from the enemy shelling and machine-gun fire. In the afternoon, the French 38th and 1st Moroccan Divisions, surmounting all enemy resistance, arrived on either side of the 2d Division, thereby relieving the situation to some extent. However, the relief of the 2d Division had become imperative by this time. The casualties in that division amounting to approximately 4,000, the unit was not in shape to carry on efficiently. The 58th Colonial Division relieved the 1st Division minus its artillery on the night of the 19th.

Thus the third day of the offensive saw the fulfillment of the 20th Corps' mission, and for the most part that of the Tenth Army. The plateau above the Crise was taken, Soissons dominated, and the highway crossed connecting Chateau Thierry and Soissons, bringing important enemy lines of communication under fire from long-range artillery.

The 1st Division now formed the apex of the angle driven into the flank of the German Seventh Army. Its objective for the 20th was Berzy-le-Sec, which had not yet been reduced. The position, as has been stated, was a strong one and dominated the surrounding country. The village had been assigned originally to the French 153d Division.

The first attack on the morning of the 20th failed, although a two-hour preparatory barrage was ordered. The French were repulsed on the left by the Germans, which allowed enfilade fire into the 2d Brigade flank. In front of Berzy-le-Sec, however, the 1st Brigade and the Moroccans succeeded in gaining ground. That night the 1st Moroccans and the 153d Division were replaced by the 87th Colonial and the French 69th Divisions. A new effort against Berzy was directed for the 21st. Liaison was made complicated for the 1st Division at this point by the 87th Division being about 2 kilometers in advance of the 69th.

At 4.45 a. m. on the morning of the 21st, the 1st Brigade moved out. The 2d Brigade was delayed by the commander of the French division on the left demanding a preparatory bombardment before advancing. Consequently the 2d Brigade attacked at 8.30 a. m. In spite of this handicap the final objectives were carried by 9.15 with important captures of guns and men. The rest of the day was occupied with consolidating the newly won positions. Thus the heights dominating Soissons, the Chateau Thierry-Soissons highway, Berzy-le-Sec and Buzancy were attained. The attack was held up on the 21st with the winning of these points, because the 87th Colonial Division was unable to overcome the enemy resistance beyond Buzancy.

The following day was more or less inactive, and during the night of July 22-23 the 1st Division was relieved. Its casualties totaled nearly 7,000, the percentage of field officers being unusually high. In the 16th and 18th Infantry, for example, all field officers except the colonels were lost.

General Pershing's opinion of the work done by the American divisions in the initial action has been expressed as follows: "Due to the magnificent dash and power displayed on the field of Soissons by our 1st and 2d Divisions, the tide of war was definitely turned in favor of the Allies."

It should be stated at this point that two endeavors were made on the eastern face of the salient by the Allies to launch a drive down the valley of the Ardre. The first attempt was started on the same day the counter offensive began on the western face. This was repulsed by the Germans. On the 19th a second effort met with failure. Although a success in this quarter, in conjunction with the attack on the other side, might easily have proven significant, yet the lack of sufficient reserves prevented carrying out the two operations on the same scale. A little later, when the enemy began in earnest his withdrawal, several attacks on the eastern face of the salient obtained results.

However, the assault of the Tenth Army, combined with the constant pressure in the east, forced the Germans to retire. With the domination of Soissons, subjecting of the enemy communications to long-range fire, and with its deep penetration into the German Seventh Army's flank, the mission of the Tenth Army was virtually complete. It now became the pivot for the attack of the Sixth Army from the south toward the Vesle. The situation proved serious for the Germans, and they decided to go back to the Vesle, fighting a holding action at the Ourcq in order to give time for clearing the salient of men and supplies and to organize defensive works along the Vesle.

The estimate of the situation on July 22 by the German High Command reads in part:

> The situation of the German Seventh Army was grave not only on account of the unfavorable shape of the front but also because of its communications. Transport movement between the Aisne and Vesle valleys had been rendered unsafe. The railroad curve east of Soissons was exposed to the effective fire of long-range guns. . . . Other means of communication were useless for the moving of troops. . . . The necessity for continual relief was obvious, as it had been in the case of the Flanders and Somme battles. . . . That our strategic position in this salient was a critical one went without saying. . . .
>
> The descriptions given G. H. Q. (by officers submitting reports on conditions at the battle fronts and reasons for the break through) confirmed us in our resolution to which we had come in the evening of the 22d, to withdraw the troops on the night of the 26th and 27th of July from the Marne to the Fere-en-Tardenois—Ville-en-Tardenois line. . . . Only a short stand was to be made on the line indicated. . . . We had in view a withdrawal behind the Vesle on a straight line between Soissons and Reims . . . but before this could be done the salient south of the Vesle, and especially the Vesle valley itself, had first to be cleared. . . .
>
> Our line contracted as our retreat proceeded. We thereby accumulated reserves but so did our enemy, who could use them for attacks elsewhere. . . . The serious weakening of the Eighteenth Army and the Ninth Army could now no longer be justified. It had to be made good by reinforcements. These could only be drawn from the Army Group of the Crown Prince Rupprecht . . . and the offensive in Flanders could not bring a rapid and decisive success. . . . G. H. Q. therefore decided to abandon this offensive and surrender reserves to reinforce the Eighteenth, Ninth and Seventh Armies. The necessary orders were issued.

I had no idea yet as how, if ever, we should be able to recover the initiative after taking up the Vesle position.

Having followed the 1st and 2d Divisions (3d American Corps) through to their final objectives in the launching of the counter-offensive and up to the point of their withdrawal from the front of the Tenth Army, attention may be

directed to the operations of the Sixth Army and the American units engaged with it, which ceased now its pivotal part and assumed the offensive.

It will be recalled that the mission of the Sixth Army was to fight a holding action, principally, to enable the Tenth Army to break through the German Seventh Army and to prevent the enemy from escaping or sending reinforcements to the attacked right flank. Only in case the enemy attempted to run away from the battlefield was the Sixth Army to become aggressive. With the counter-offensive established by the Tenth Army, however, the Sixth Army was to commence operations as an attacking force.

While the Tenth Army was attacking, the Sixth Army as pivot was called upon to carry out plans which exacted careful arrangement of operations and accurate adjustment of time schedules.

The army was formed with two wings and a center. The left wing, consisting of the French 2d and 7th Corps, was to attack at the same time with, and in prolongation of, the line of the Tenth Army. The center, which was the 1st American Corps, was not expected to make a determined attack but to act as pivot for the left wing, and also for the right wing, formed by the French 38th and 3d Corps, which was ordered to swing northward.

The 2d Corps held that part of the Sixth Army front from the Savieres River just north of the Ourcq to a point south of Dammard; the 7th Corps continued the line southwest to Hautevesnes, from which place the 1st Corps carried on to Vaux (Bouresches to Torcy); the 38th Corps extended the line past Mezy from there, and the 3d Corps completed the line of the Sixth Army along the Marne from Mezy to the vicinity of Dormans. Thus the left wing faced east, and the right wing north, with the center in the angle formed by the two wings. The center then was pivot for the pivot army. The action was somewhat like the closing legs of a compass. Obviously each part of the Sixth Army had a different task to perform.

During the first part of the fighting by the Sixth Army, in other words during the initial attack by the Tenth Army, the American 4th Division operated with the left wing, having one brigade (the 7th) with the 2d Corps and one brigade (the 8th) with the 7th Corps. The 1st Corps, or center, had the American 26th and French 167th Divisions. With the French 38th Corps of the right wing were the American 3d and 28th Divisions.

The terrain in front of the 2d and 7th Corps was probably the least difficult of any of the American units. It paralleled the valley of the Ourcq, and, although hilly and fairly well wooded, it cannot be said to have possessed the natural obstacles to be found in the front of the Tenth Army around Soissons, nor facing the 1st American Corps farther south.

The sector of the 1st Corps was marked by a narrow valley from Bouresches to Torcy, which was in the hands of the Germans. Besides the two towns mentioned, there were Belleau and Givry in the valley. Behind these villages, and in such a position as to flank them, rose a steep, wooded height known on the map as Hill 193, which interposed itself as a barrier to progress in that direction. A little farther east was a similar barrier in Hill 190. The first position commanded the

entire front of the American line. In general this territory is rugged and cut by ravines. The terrain of the right wing will be discussed later.

At dawn of July 18, without artillery preparation but under the protection of a heavy smoke screen, the left wing of the Sixth Army attacked in conjunction with the Tenth Army. The 7th Brigade, 4th American Division, advanced according to plan with the French 2d Corps, stormed Torcy successfully, and reached all objectives for the first day. Chevillon was reduced by the 8th Brigade, operating with the French 7th Corps, but heavy enemy fire halted its progress in Sept Bois.

Because the Tenth Army gained such almost unexpected success, and because the pivotal troops were not so fortunate, there existed a menacing angle in the line where the two armies joined, on the morning of the 19th. In the next three days' fighting, the 4th American Division, acting with the two French Corps, 2d and 7th, eliminated this angle. The American division, being equal in strength to about two French divisions, found itself sharing no small portion of the struggle in the left wing of the army, and so, after five days' successful but heavy fighting, the division was relieved, appearing again in the final drive to the Vesle.

The 1st Corps attacked at the same hour on the morning of the 18th as all the other units. The orders for the attack assigned the capture of the villages Belleau, Givry, and Torcy to the 26th American Division, and Hills 193 to 190 to the French 167th Division.

The 26th Division had taken over the lines held by the 2d American Division in the vicinity of Vaux. From these positions along the slopes overlooking Belleau and Givry, which in turn were flanked by the hills referred to, the division was expected to execute a change of direction in the face of the enemy while attacking. The 51st Brigade was not to advance, but the 52d Brigade was called upon to storm the towns while the French surmounted and reduced the hills. It was at least a serious proposition.

Opposed to the Allies at this point were reported about five regiments of enemy troops, so that the French and Americans had numerical superiority as against the Germans' commanding situation on the battlefield.

The attack began with confusion, delay, and misdirection of units in the changing of positions, which, combined with the difficulty of the terrain, threatened to defeat the maneuver at the start. All objectives were finally attained after experiencing trouble, little of which was contributed by the enemy. Upon gaining these positions, however, flanking fire from Hill 193, together with artillery counter work, forced the Americans back to the line of original departure. The French 167th Division was unable to subdue enemy opposition on the hill, which had resulted in the exposure of the Americans to enfilade fire. A second attempt, later in the afternoon of the same day, fell short of expectations again but added to the number of casualties. Thus the attack of the 1st Corps was negligible with respect to results for the first day's fighting.

(*To be continued*)

Athletics in Porto Rico

By Captain A. M. Weyand, 65th Infantry

WHENEVER a transport touches at San Juan there is usually considerable surprise expressed at the fact that the native Porto Rican soldiers actively engage in the various forms of American sports, including football, boxing and other games requiring physical contact. All of the standard American sports are now firmly established in the regiment.

Following the American occupation in 1898, the American soldiers quite naturally introduced their own kinds of games, and as there was a large naval station in Porto Rico prior to the purchase of the Virgin Islands by the United States, it was a case of Army versus Navy, and many thrilling matches resulted. These games aroused considerable interest among the Porto Ricans and, as a result, baseball was soon adopted by them and rapidly gained headway, until now there are many excellent teams and players on the island.

With the establishment and growth of the Porto Rico Regiment of Infantry the American troops were gradually withdrawn until, at the beginning of the World War there was only a handful left in the Quartermaster Detachment. The naval station was moved to St. Thomas, leaving only about forty marines and sailors on duty on the island. The Army-Navy games thus died a natural death. The Porto Rico Regiment, however, maintained its baseball team, and it attained a fairly high state of proficiency. Field days were also held, thus affording the majority of the men an opportunity to participate in competitive athletics.

The regiment served in Panama during the war, and the baseball and track teams fared very well in comparison with the American regimental teams. In the meantime a National Army camp called Las Casas was established near San Juan, and here football and boxing were revived. The latter sport is illegal on the island and has, naturally, never flourished. Basket-ball and volley-ball have both attained some slight degree of popularity.

Following the war the Porto Rico Regiment of Infantry was renamed the 65th U. S. Infantry. Col. Melville S. Jarvis was sent to command the regiment, and under his guidance the athletic policy was broadened and an effort made to interest more men in athletic games than hitherto, when practically no one played except the few members of the teams.

Strangely enough, the first sport to be played by a regimental league was American football. This was probably due mainly to the enthusiasm of several of the younger officers who had played the game in the United States, notably Maj. Enrique Urrutia (Carlisle), Capt. Manuel Navas (Syracuse), and Lieut. Edgardo Vazquez (West Point). Company C won the championship of the league and was presented with the Post Exchange Trophy.

About this time several gentlemen in San Juan organized a team of former college players and challenged the army eleven. The challenge was accepted,

and the teams clashed on the El Morro grounds. The civilians, however, who were not in as good physical condition as the soldiers, were gradually worn down and finally beaten, 6 to 0. Major Urrutia was coach and captain of the army team.

In May, 1921, the first regimental baseball league was organized and consisted of twelve teams. At the completion of the league schedule late in October, Companies A and H were tied for first place. The teams played off the tie, and Company A won the title game, 4 to 1, and also received a silver cup from the Post Exchange. An amusing incident of the season was a game between an officers' team and a naval officers' team from St. Thomas during a Saturday afternoon stop-over of the yacht *Vixen*. There was but one afternoon available for the game, which was thus forced to be played in a driving rainstorm on a field ankle-deep in mud and water. The naval officers finally won what was probably the weirdest game in modern baseball history.

In the fall there was some talk of reviving the Football League, but it was finally decided instead to organize a regimental team and accept a challenge to play a combined navy and civilian team on Thanksgiving Day. The so-called "Navy" team was organized and captained by Mr. F. U. Wells, a former Yale player. The army team was coached by the regimental athletic officer and captained by Capt. N. D. Woodward. An indispensable adjunct to the coaching staff was Captain Navas, who acted as interpreter and served to translate the coach's instructions to those players who spoke little English. The Navy underestimated their opponents' ability and were easily beaten, 21 to 0.

Commander Rufus King, in command of the naval forces in Porto Rico, took charge, reorganized the team and challenged to a return game which was played on Christmas Eve. The Navy had taken advantage of the privilege to play civilians and had strengthened their team by the acquisition of Cramer, a former Penn State halfback. The Navy clearly showed the results of Commander King's coaching and won the second game, 6 to 0. This necessitated a rubber game. The teams met on January 14 before a representative gathering, and the Army battered out a victory, 6 to 0. Negotiations were opened with the Cuba Athletic Club of Havana for a game to determine the champion of the West Indies, but the lateness of the season prevented this interesting match from being played.

Early in the year Colonel Jarvis issued a memorandum outlining the athletic policy for 1922. The program includes enough variety to tempt the most fastidious lovers of sport. It includes baseball, football, basketball, track and field, volley ball, boxing, tennis, golf and polo.

The regimental baseball league has been expanded to fourteen teams which commenced playing February 13; the season will terminate in the latter part of May. Over 200 men took part in the games last season, and an even larger number should play this year. Games are played every drill day, and a double header is played on Saturday, thus giving every team a chance to play once a week, there being only one field available.

Following the two months devoted to target practice, a regimental team will be organized and will play a schedule including many of the leading teams of

the island and culminating in a series with the Navy. With the talent at hand a championship team should be developed. Baseball is the favorite game of the enlisted men, and last season's regimental team was composed entirely of Porto Ricans, including the manager and coach, Captain Navas.

The basketball team is playing in the San Juan Basketball League, which includes teams representing the Army, Navy, High School, Union Club, Snow Club and Jax Club. No regimental league was organized because of lack of time. However, a regimental outdoor volley-ball league will play out a schedule during the summer. The first regimental boxing championships ever held took place on the night of February 23. The results were very gratifying. The ring was pitched in the patio of the barracks, and several thousand people could easily see the bouts.

The annual track and field championship will be held on March 24 (Organization Day). A team will be selected at that time and will be entered in the insular championships on April 2 at Ponce. This is the first attempt in Porto Rico to hold anything more pretentious than an interscholastic meet, and the results are eagerly awaited. The list of events shows the native taste in such matters. It includes a 100-yard dash, a 220-yard dash, a quarter-mile run, a half-mile run, a 220-yard hurdle race, a mile relay race, running high jump, running broad jump, pole vault, shot put and baseball throw.

There will be a regimental golf tournament in the spring and a tennis tournament in the fall. The Army is always represented in the various tournaments held from time to time in San Juan or vicinity. A polo team is being organized, but progress is slow, as horses have to be trained and there is very little competition. Several civilians are interesting themselves in the game, and it would not be surprising to see teams in several of the cities of the island within the next few years.

The Porto Rican takes very kindly to athletic sports. He is naturally excitable, but it is surprising to what an extent military training and discipline aid him in controlling his emotions. At the present time almost all of the officers on duty with the regiment are continental Americans. They are, with hardly an exception, taking a deep personal interest in the development of the teams. As evidence of the fact it may be stated that, after the defeat of the football team by the Navy, over half of the officers on the Post of San Juan turned out to try for positions on the team. The final victory thus was a tribute to the spirit of the entire regiment.

Foreign Armies and France[1]

By Henry Bidou

AT THE moment when France is organizing its army, let us cast a glance at the military laws of other countries. As a matter of fact, there is a necessary connection between the armaments of different countries, by means of which their equilibrium is maintained.

Opposite France there is a German army consisting officially of 100,000 professional soldiers, doing a long-term service which, as we have often said, would be tripled in case of a conflict and immediately increased to 300,000 men. The country would be mobilized under shelter of this powerful covering.

Italy is just now passing through a regime of transition which will lead to the adoption of the eight-months term of service. However, while waiting for the preparatory instruction of the young men to be carried out, the one-year term has been retained provisionally. With the eight-months term of service effected, the army will consist of 175,000 men, to whom a colonial army of 10,000 whites and 40,000 natives must be added, making a total of 225,000 men. Of course, as long as the service lasts one year, the effectives will be greater, or about 250,000 men. The effective strength before the World War was 274,000 men. The army forms thirty divisions, grouped in ten general commands of three divisions each. The reduction of military forces in Italy will thus be slight, while, for the time being, there is none at all.

Czecho-Slovakia has an army of which the normal effective strength is 150,000 men. However, according to German sources, it had forty excess battalions last summer, also forty-nine field batteries and sixty-three heavy ones. The number of men with the colors was said to have been about 180,000. The active army consists of twelve divisions, grouped in four regional high commands at Prague, Brünn, Pressburg and Ungvar. It is estimated, according to the same sources, that the army would have about 1,750,000 men in case of mobilization. The twelve active divisions would then be supplemented by twenty-four reserve divisions.

Jugo-Slavia had five classes under arms in the first few months of 1921, forming a total of 190,000 men. The army was divided into two sections, one in the north, opposite Austria, the other in the south, opposite Albania, Greece and Bulgaria.

Greece is at present engaged in war in Asia Minor, owing to which its army has been raised to a relatively high effective strength. It had 240,000 men, divided into six corps of three divisions each, at the beginning of 1921. It had 300,000 men in the middle of the year, of whom 200,000 were in Asia.

We now come to the vanquished nations, to whom the treaties have prudently restricted the military forces which it was deemed wise to allow them to maintain. However, it must not be forgotten that these armies consist of professional soldiers, doing long terms of service, who, in case of mobilization,

[1]From *Le Journal*, February 20, 1922.

would make excellent N. C. O.'s. As a matter of fact, they form the framework of armies, and it would be to judge them beneath their value were we to base our judgment on their numerical forces alone.

It must be admitted that the greater part of these countries have a great deal of difficulty in organizing the professional army conceded them. Thus, according to the treaty, Austria is entitled to 30,000 men. In the summer of 1921, however, voluntary enlistments had furnished but 22,000. The idea was conceived of covering the deficiency with military and civil police. The Trianon treaty permits Hungary an effective strength of 35,000 men, and the army, which had 130,000 men, had to be reduced in the course of 1921 to the figure stipulated thereby. In its definite form it consists of seven brigades. The population, however, which is an agricultural one, is little inclined to furnish professional soldiers. The same may be said of Bulgaria, to which the treaty of Neuilly concedes an army of 20,000 men and sixty cannon. It has, besides, 13,000 military police.

We now come to a third group of countries which are in direct contact with Bolshevist Russia, viz., Roumania and Poland. The situation in Poland last spring was the following: The 1910-1915 classes had been demobilized after the close of the war against the Bolshevists. The 1916-1920 classes remained with the colors, and a census had been made of the 1921-1922 classes, of which the incorporation was prepared. Besides this, volunteers and civic guards were said to have been called out from the provinces recovered from Germany, viz., Posen and East Prussia. According to German sources, the distribution of the Polish divisions was the following: On the Russian frontier in the east, three infantry divisions and three cavalry brigades, the latter supported by a fourth brigade at Lemberg, in the rear of the southern wing; one or two divisions with cavalry on the Lithuanian frontier on the northeast. The entire remainder of the Polish Army—i.e., twelve to fourteen divisions—was lined up on the German frontier in view of the forebodings relative to the division of Upper Silesia. Finally, there was a central army of five to six divisions in the region of Warsaw at the junction of the railways. This made a total of about twenty-five divisions.

As for Roumania, its army consisted at the same period of twenty-three (?) divisions, of which eight were on the Dniester and in Moldavia, six in the Dobruja and Wallachia, and the bulk—i.e., thirteen divisions—in Transylvania.

Finally, there is the big question which is very disquieting, and the answer to which is difficult to ascertain with exactness: What is the force represented by the Soviet Army? The last document of which I know is the speech by Trotzky published in the *Izvestia* of December 28 last. The Red Army at that time comprised 1,370,000 men, divided into ninety-five infantry brigades and forty-five cavalry brigades. Thirteen per cent of the officers had come from the Czarist Army, the rest forming the Red cadre proper. Of the total, 67 per cent of the officers were of peasant origin, 12 per cent came from the working classes, and 20 per cent from the others. This speech by Trotzky was extremely menacing. He spoke openly—and this was less than two months ago—of an inevitable and decisive conflict between proletarian

Russia and capitalistic Poland and referred to the necessity of keeping the Red reserves in readiness for the moment at which the German Soviets, too, would take up the struggle for power.

Summarizing, how does the military map of Europe look today? In the center, a group of armies composed of professionals, not numerous in appearance but consisting of experienced men, capable of furnishing excellent cadres. Of these armies, one only is really strong, viz., the German. The others, in Austria, Hungary and Bulgaria, are recruited with difficulty. In the south, the groups of nations of the Little Entente present a military force which is relatively great, each one of those nations having a standing army of between 200,000 to 300,000 men. In the west, France, which has three military frontiers, is surrounded by countries of which the armies, even though friendly, determine its strength to a certain extent. Spain has an army of 300,000 men, and the Italian Army is almost as large. As for the British Army, it hardly exists any longer, the regular army having been reconstituted into five infantry divisions, as it was before the war. In the east, a last group of armies is still on a half war footing and has big effectives. These are Poland, Roumania and Russia, and it is in this quarter that the equilibrium is the least stable and the future the least certain. Just as Russia, from a viewpoint of statesmen, is one of the countries most feared in regard to future policies, so does its army of 1,500,000 well-equipped and well-armed men under arms (despite demobilization at the rate of 300,000 to 400,000 per month in the spring of 1921) represent a force which it would be dangerous not to recognize.

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Short-sighted Policy

I say to you that if we do not make adequate provision for the instruction of the men in this country who are willing to meet an emergency we are showing a very short-sighted sort of policy toward the physical training and equipment of our race, as well as an unfortunate mental attitude toward the very safety of our country and the preservation of its welfare. (*Statement by Mr. Fitzgerald, of Ohio, on the floor of the House during the debate on the Army Appropriation Bill.*)

Sub-Caliber Attachment for 37-mm. Gun

By Lieutenant E. A. Kimball, 34th Infantry

DESCRIPTION OF APPARATUS

THE barrel of a 22-caliber U. S. rifle must be altered slightly by filing away small portions of the receiver. This will allow the fastening with babbit metal of an empty 37-mm. shell to the receiver of the 22-caliber barrel. A portion of a 37-mm. common steel projectile (1 13/16 inches long) is fastened by babbit metal about 1 21/32 inches from the muzzle of the 22-caliber barrel. By using the portion of the projectile and the empty 37-mm. brass shell, the 22-caliber barrel has a perfect rest in the bore and in the breech of the 37-mm. gun. It is very easily inserted and withdrawn from its position and may be fired by means of the firing mechanism on the 37-mm. gun.

The cartridge holders are those issued by the Ordnance Department for the 22-caliber U. S. rifle. They are loaded and placed into the chamber of the 22-caliber by hand. After firing they are very easily withdrawn.

The ammunition used is the ordinary 22-caliber issued by the Ordnance for use in the 22-caliber U. S. rifle.

The 37-mm. gun is mounted "on tripod" on a suitable platform. The muzzle should be 500 inches from the front part of the sand-box. Better accuracy is obtained by securing the two spades and front leg float solidly to the platform.

The sand-box is made of wood and filled with sand. By cutting and painting pieces of tin or blocks of wood, it may be made to have the appearance of a landscape target. If landscape targets are available, they may be used by dropping them like a curtain in front of the sand-box.

In constructing the sand-box the "0-line" must be very carefully determined so as to have the correct elevation lines on the range board. This line must be at the same elevation as the axis of the bore of the 37-mm. gun when the axis is level. The height of this line may be determined by actual measurement or by taking the average height of a number of shots fired with the quadrant sight. In firing these shots the site corrector ring and the range disc are set at zero, and the bub-

SECTION AND PLAN OF SUB-CALIBER ATTACHMENT FOR THE 37-MM. GUN

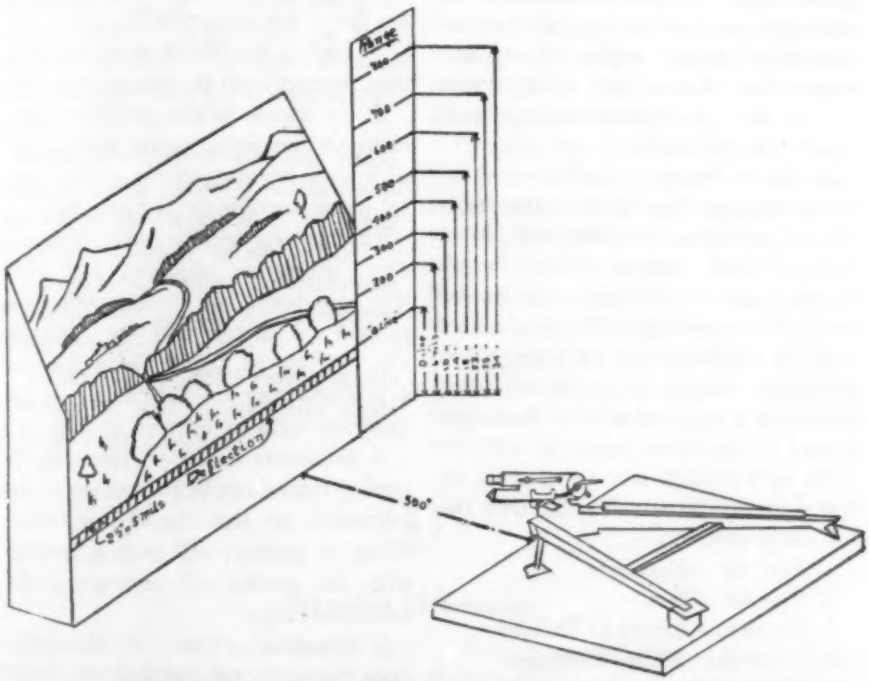
ble is leveled by means of the elevating wheel.

The gun and the sand-box being 500 inches apart, one mil at the gun position represents ½ inch on the sand-box. Knowing this and having determined the "0-line," a deflection board and a range board with the proper markings may be very readily constructed and placed as shown on the blue print.

open its breech. Insert a loaded cartridge holder into the chamber of the 22-caliber barrel. Close the breech, and fire the piece by pressing down on the thumb-piece of the 37-mm. firing mechanism.

To Unload.—Cock the piece, and open its breech. With forefinger of the right hand, remove the cartridge holder.

To Load.—Cock the 37-mm. gun and



Sand-box Landscape Target for Use with the 37-mm. Gun

FUNCTIONING OF THE SUB-CALIBER

To Insert the Sub-Caliber.—Remove the extractor hinge pin of the 37-mm. gun. Cock the 37-mm. gun and open its breech. Very carefully insert the sub-caliber attachment until the brass 37-mm. shell takes the same position as a regular 37-mm. loaded shell takes when the breech block is ready to be closed.

Note: Care must be taken that the cartridge holders are properly loaded and that they are carefully and properly shoved home when inserted into the chamber of the 22-caliber rifle.

To Remove Sub-Caliber from the 37-mm. Gun.—Cock the 37-mm. gun and open its breech. Very carefully withdraw sub-caliber attachment to the rear.

Cleaning.—Both the 37-mm. barrel and the 22-caliber barrel must be thoroughly cleaned after firing.

THE USE OF THE SUB-CALIBER ATTACHMENT

1. *Definitions.*—The instructor may, by practical demonstrations, fully acquaint the student with meanings of the definitions of the following terms used in laying the 37-mm. gun: Aiming point, angle of departure, angle of reference, angle of site, angle of deflection, direct laying, indirect laying, elevation, line of aim, line of departure, line of site, quadrant elevation, range, target designation.

2. *Direct Laying.*—Students may be given thorough instruction in the methods of obtaining fire data for direct laying. Each student should be allowed to act as observer and gunner until he has become fully acquainted with the methods of direct laying when the target is used as an aiming point and when a point other than the target is used as an aiming point.

As each student acts as observer he will naturally become familiar with the following subjects:

1. Fire for Adjustment.
2. Fire for Effect.
3. Correcting Errors in Deflection.
4. Correcting Errors in Range.
5. Determining the Initial Range.
6. Bracketing.
7. Creeping.
8. Fire Orders.
9. Use of Range Tables.
10. Method of Obtaining the Angle of Deflection.
11. Method of Obtaining the Angle of Reference.

As each student acts as gunner he will have the opportunity of understanding the functioning of the telescopic and quadrant sights in direct laying.

3. *Indirect Laying.*—(*a*) *Laying for Direction:* The student, acting as observer, will be given an opportunity to understand the following methods used in indirect laying to determine fire data for direction:

1. Establishing a straight line from the target and placing the gun so that the barrel lies along this line.

2. Laying the barrel along the compass bearing from the gun to the target.

3. By means of the deflection apparatus on the sight, laying upon a line of known angular relation to the vertical plane through the line of site.

(*b*) *Laying for Elevation:* The student, acting as observer, will have the opportunity of understanding the method of determining the angle of site. Acting as gunner, he will see in a practical way the functioning of the quadrant sight in indirect laying.

4. *Minimum Range.*—Objects, representing masks, can be pointed out by the instructor, so that the student, when acting as gunner, will become familiar with the method of determining the minimum range.

5. *Overhead Fire.*—By demonstrations the instructor may make each student familiar with the principles of overhead fire in each of the following cases:

1. Direct Overhead Fire. Troops not advancing.

2. Direct Overhead Fire. Troops advancing.

3. Indirect Overhead Fire. Troops cannot be seen from the gun.

4. Indirect Overhead Fire. Troops can be seen from the gun.

GENERAL REMARKS

The cone of dispersion of the 22-caliber U. S. rifle has about 2½ inches in diameter at 500 inches. Shots fired with the same sight setting cannot be expected to have the same point of impact on the sand-box. This will help the instruction of the observer and gunner, for they will experience the same trouble when they are outdoors actually firing at targets with the 37-mm. ammunition.

The angle of deflection may be determined by the observer by actual measurement on the sand-box or by using the deflection disc of the sight.

The angle of site may be determined by the observer by actual measurement on the sand-box.

The angle of reference may be determined by the observer by actual measurement on the sand-box.

Ranges may be determined by the observer by use of the range board on the sand-box.

Corrections in deflection may be determined by use of the deflection board, and corrections in ranges may be determined by use of the range board.

It is only possible to give instruction in correcting errors in deflection in the following cases: (*a*) The observer at the gun position; (*b*) the observer in front of the gun position on the line from gun to target; (*c*) the observer in rear of the gun position on the line from gun to target.

In using the telescopic sight in direct fire it must be remembered that the trajectory of the 22-caliber projectile is practically a straight line. Changes in ranges on the range disc will have very little effect on the points of impact on the sand-box. For this reason it is advisable to use the quadrant sight as soon as possible after the students have become familiar with the operation of the telescopic sight.

Sergeant Ostermoor

When the transport *Prairie* carried an expeditionary force to France, the whole ship was packed and jammed with soldiers. There was little room to stand, let alone to get any sleep, in the standee bunk compartments.

On the fifth day at sea a soldier came to the colonel's quarters, and, after waiting around ten or twelve hours or so, he gained an audience.

"Colonel," said the soldier, "I've just naturally got to have some place to sleep."

"Why," replied that officer, "you don't look fagged. Haven't you been sleeping some place these past four nights?"

"Yes, sir," the soldier answered, "I've had a place so far."

"Why can't you keep on using it?" queried the colonel.

"Well, sir," the soldier sadly replied, "I've been sleeping on a sergeant out of G Company while he has been seasick, but he's getting well now and says he won't stand it another night."

Third Corps Area Correspondence School

By Captain W. L. Tydings, Infantry

THE purpose of the army correspondence courses is the training and education by correspondence school methods of the members of the Reserve Corps, the National Guard and such civilians as may volunteer for them. The Correspondence Schools were the subject of much publicity work during the latter part of 1921, with a view to obtaining a large enrollment. A generous response was received from the officers and enlisted men of the third corps area, and altogether a total of 887 students were enrolled. Of this number, a large proportion were National Guard officers, most of whom hold reserve commissions, and about 15 per cent of the total enrollment was composed of enlisted men from the National Guard. Sixteen civilians, nearly all of whom have had previous military service, were also enrolled.

Pennsylvania furnished more students than any other state in the corps area. The National Guard regiments of Pennsylvania in particular furnished large quotas. The 111th Infantry contributed 53 officers and 83 noncommissioned officers. This is the largest regimental enrollment in the corps area. Virginia also took a very active interest in the enrollment of her National Guard officers, with the result that practically every officer of a federally recognized unit is now enrolled in the school.

The school was formally organized on January 24, 1922, and is designated as Section II of the Department of Civilian Training of the Operations and Training Division, Training Center of the Third Corps Area. The section is headed by an assistant director, who is responsible to the director, Department of Civilian Training. In addition to the assistant director, the school personnel consists of a secretary, eight infantry officers, one coast artillery officer, four field artillery officers, and two cavalry officers. All instructors except the officer in charge of the coast artillery class and the assistant director and secretary were taken from organizations of the training center and detailed to the correspondence work in addition to their other duties. Clerks are provided from training center organizations. A staff sergeant and one private for the office force of the secretary were detailed from the staff section of the training regiment. One sergeant acts as a clerk for each instructor, and the remaining sergeant is employed under the secretary of the school in the operation of a graphotype and addressograph machine, for the addressing of return envelopes to be used by the students.

For the year 1922 the courses will be confined to a maximum of the first seventy-eight hours of work in Course "A" (basic) for each of the branches; Infantry, Cavalry, Field Artillery and Coast Artillery. A large number of officers of branches other than the above applied for instruction in their own arm, but, being informed that the course would only cover the four combat branches, a majority of such officers elected to take one of the four courses.

Briefly, the system of instruction conforms to the methods used in civilian

correspondence schools. Each student is assigned a school registration number out of a block of numbers which each instructor is given. Then the four sections of the school are assigned a block of numbers, out of which the separate blocks of numbers for the different instructors are carved. For instance, the Infantry block of registration numbers is from 1 to 4,999, the Cavalry from 5,000 to 5,999, the Field Artillery from 6,000 to 6,999, and the Coast Artillery from 7,000 to 7,999. Captain "A," an infantry instructor, is assigned a block of numbers from 1 to 150; he has in fact only fifty students. The additional numbers are for new students which may be assigned to him. Under this system the school number of the student appears on all papers relating to him. The return franked envelopes bear that number. When a reply is received from a student, the envelope is placed in the instructor's mail box, which is appropriately labeled with his name and block of registration numbers. In this way no one opens the mail but the instructor or his clerk.

The original enrollment in the four classes was as follows: Infantry, 548; Cavalry, 126; Field Artillery, 151; and Coast Artillery, 62. The secretary prepared in advance a locator card for each student. These cards were divided among the various instructors, according to the amount of time which each could reasonably be expected to spend on the work. Some instructors had as low a number as fifty, while others had as high as 130 students. Upon receipt of the locator cards and applications, the instructors with their clerks prepared their records and files. In cases where a formal application was not received the instructor made a note of such fact and sent a proper form of application with the first papers going out to the student. A folder, size 9 by 12 inches, is prepared for each student, and on the tab are written his name, rank (if any) and school number. In this folder are placed all the lesson sheets for the entire course, a supply of addressed return envelopes and answer sheets. In addition to this each instructor has a roster of his students, three copies of a progress card, and one copy of the lesson assignment card. The latter is the instructor's record of the student's progress and upon which is noted the date when a lesson sheet is sent out and the date it is returned. The student's copy of the progress card is retained by him until he has finished a sub-course, when he sends it in with his examination papers. The rating made on the examination is noted on the examination paper and returned to the student. The examination is conducted by an officer other than the one who corrects the student's answer sheets in the sub-course.

In the infantry class, lessons 1 and 2 of Course "A" were mailed to the students enrolled in that section on February 1. The replies from the students in this section are now coming in. In the infantry class it is intended to give sub-courses in Pistol, Automatic Rifle, Bayonet Combat, Organization of Rifle Platoon for Combat, Musketry, Machine Guns, Howitzer Company and Grenades.

The work of filing and keeping of records in the school has been simplified to a high degree. Each instructor has a large metal filing case near his desk, into which all the folders for his block of students are filed. His progress cards and lesson assignment cards are

filed in a card index on his desk. The original application of the student is kept in his folder by the instructor. The secretary keeps a locator card for each student, showing his name, rank, organization and address and school registration number.

The school is located in an ordinary barrack building in the training center and occupies one-half of the upper floor. The imposing array of desks and typewriters would no doubt remind one of a small corner of one of the large mail-order houses.

Already the school is developing mail friendships between instructors and students. Many students write notes accompanying their answer sheets asking their instructor's opinion on such and such a matter. In every case the instructor is very glad to answer any such inquiry. When the Roma disaster occurred at the army base at Norfolk, a field artillery student sent his instructor a set of views, showing various angles of the wreck, with explanatory notes, which, of course, was warmly received and appreciated by the instructor. Another student who is taking the infantry course wrote his instructor: "I know that what you say about the rifle marksmanship is true, because I have just returned from a course at Fort Benning with a Sharpshooter's badge, and I couldn't hit a barn before I went there."

Considering the fact that the enrollment in the school is entirely voluntary and that the student agrees before enrollment in the school to devote a minimum of three hours per week in the work, the showing made by the students of this corps area is very creditable.

When the summer camps are held, it is planned to give the Correspondence School further publicity and to clear up any questions which may be in doubt. It is confidently believed that, with the proper effort in this direction, the fall enrollment can be largely increased.

This work is infinitely important. It will accomplish a great deal toward the harmonious working together of the three component parts of the Army of the United States, to the end that the military policy of the United States may be carried out in spirit as well as in letter. There is still hard work ahead, but the results to be achieved are so far-reaching that no one concerned should hesitate to give the project his wholehearted support, whether he be a member of the Regular establishment, the National Guard or the Organized Reserves.

Newspaper Headings

"Milking Done by Machinery."—The machine is a contraption with a handle that works up and down.

—

"Men in Ten Mills Strike."—Another case where figures lie—ten mills do not make a cent.

Evolution of the Gas Mask[1]

A PERSON interested in chemical warfare in any way may find much of interest in studying the evolution of the gas mask, watching the improvements in defense against gas from the first crude methods employed in that terrible emergency facing the allied armies after the horror of that first greenish cloud, through to the present-day American Tissot mask, which, when properly worn, is an absolute protection against all known battle gases.

When, on April 22, 1915, the Germans released that cloud of chlorine gas against the British and Canadian troops at Ypres, they caught the men facing them absolutely unprotected and helpless to combat it. The British casualties on that day have been estimated at between seven and eight thousand men, with as many more captured. Not a single gun was in action on a whole corps front.

Protection against a repetition of such attacks was an absolute necessity, and within two days after this attack, 100,000 crude masks had been prepared by the women of France and sent to the front, these masks being, however, simply strips of gauze and cotton tied over the nose and mouth. The balance of the men used only torn strips of shirting. These strips were wet with water, and in some instances with urine, which contains an alkali ammonia to combat the acid fumes. It was found, after this first attack, that many men who had been wounded and left for dead were but slightly gassed when found with their faces lying in the mud, the wet earth to some degree acting as a filter. Thus, men were instructed to use bottles, the bottom broken off and filled with earth and water, through which to breathe. This method proved fairly effective when the men could obtain the bottles, and when the bottles survived the knocking off of the bottoms. While these methods afforded a fair protection against chlorine they would have been useless against the battle gases now in use.

At this time it was not known what gas was being used, the knowledge being confined to a certainty that it was an acid agent that had been used, from its effect on metals. About this time Professor Haldane went to France and established the fact that it was chlorine which the Germans were using. Now chlorine is chemically very active, and therefore easily absorbed. This lessened the Allies' task of providing means of protection against it, simply requiring that the gas-laden air would be drawn through some material saturated with an alkaline solution.

About May 4, 1915, the first respirators, called pad respirators, were used by the British. These were simply pads, made of five or six layers of flannel or cotton wool, wrapped in muslin, to be soaked in a solution of sodium carbonate, hypo (sodium thiosulphate) and water and wrung out before being used. These pad masks were made by the women of England in response to the urgent appeals made to them by Lord Kitchener. Additional pads of cotton waste were kept in boxes in the trenches. Upon the

[1]Lecture at the Infantry School in the Chemical Warfare Course.

gas alarm being sounded, eight or ten men would dive for the box, grab a pad of the cotton waste, stuff it into their mouths and nostrils, and then fasten the pad over it. This was not an extremely popular mask (even as popularity goes with gas masks), as the same men rather rarely obtained the same pad of waste. It was also impractical, as it required too frequent soaking in the solution provided for that purpose. Following a short use of this mask, the black veil respirator was produced.

The black veil respirator consisted of a four-fold piece of black veiling, about a yard long and some 8 inches wide, containing in the center an 8-inch square of cotton wadding, saturated with a solution of sodium carbonate, hypo, glycerine and water. The glycerine was added to the solution (which was otherwise the same as that used with the pad respirator) to keep the pad moist and to prevent it from freezing.

This mask was worn by the British during the gas attack which the Germans launched against Hill Sixty on May 10. It was found chemically effective, but due to the fact that it left air passages down each side of the nose, many casualties occurred, and from this it was learned that the mask, to be effective, had to fit and adjust properly. About this time the Germans were reported to have been seen wearing a mask that looked like a bag on the head. From the information in this report was evolved the third respirator, called the Pimlico helmet.

The Pimlico helmet, sometimes called the Hypo helmet, was a flannel bag worn over the head, with a skirt that was tucked in under the collar of the coat. It had a single window-pane, or eye-piece, of mica sewn in it. This was carried in a waterproof bag and was soaked in the same solution as the black veil respirator, namely hypo, sodium carbonate, glycerine and water. This respirator was a very great improvement over former masks, but its drawbacks were that the mica eye-piece, being very brittle, cracked quite easily, was hard to sew on to the fabric, and the needle holes left openings through which the gas could enter. Another great drawback was that, as it has no outlet valve, the air inside the mask soon became impregnated with carbon dioxide, due to the fact that breathing through the fabric was difficult.

Shortly after the helmet was brought into use it was discovered that the Germans intended to use a new gas, far more deadly than chlorine, and one which was very difficult to protect against, namely, phosgene.

It is interesting to note the very efficient and thorough work accomplished by the Intelligence Department of the British Army, as demonstrated by the reporting of this intended use of phosgene. In July, 1915, they not only discovered and reported that the Germans intended to use phosgene, but the exact date upon which it was to be used, December 19, 1915, and the sector of the front against which the attack was to be launched, namely, Messines Ridge. This work of the British Intelligence Department appears to have been more than the equal of any done by the German Secret Service, of which so many boasts were made in their propaganda in this country before our entrance into the war.

Due to this efficient work by their Intelligence Department, the British had practically five months in which to

devise and prepare means of protection against the insidious and highly toxic properties of phosgene. The outcome of this five months of investigation was the P. helmet. This helmet was of the same general shape as the Pimlico helmet, but had a longer skirt, glass eyepieces were substituted for the mica eyepieces, and it had an outlet valve and mouthpiece. To combat the phosgene, sodium phenate was added to the solution previously used. As it was found that the action of carbolic acid destroyed the flannel fabric, and also as the solution tended to burn the faces of the men, the helmet was made of two layers of flannelette. Later a Russian chemist bringing out the fact that hexamethylene-tetramine was a most effective antidote to phosgene, it was added to the solution and the helmet was then called the P. H. helmet.

On December 19, 1915, as had been reported, the Germans launched an attack of phosgene and chlorine against Messines for about one hour, and although there were a number of casualties, the P. H. helmet proved very satisfactory. The casualties were caused chiefly by the absence of warning; that the gas being heavier than air, stayed in the dugouts, mine shafts, etc., and the men entered the dugouts and shafts too soon. A certain number of casualties were also caused by men running around too much, breathing heavily, thus inhaling faster than the mask could filter the air.

Many lessons were learned from this attack, chief among which were that the masks could not be removed until it was absolutely certain that all gas had been removed from the trenches, dugouts, etc., that men must not exert themselves unless absolutely necessary, and that, above all, means of warning must be taken and the masks put on in as short a space of time as possible.

The importance and necessity of being able to put the mask on in the shortest possible space of time was shown in the gas attack against the French on December 26, 1915, where they had very heavy casualties. The French mask of that time was just as good a filterer as the British helmet, but whereas it took but a few seconds to put on the English helmet, it took much longer to adjust the French mask, and that difference in time meant a large loss of men. While any normal man can hold his breath the length of time it took to adjust the French mask, it was found in the excitement incident to the attack he will rarely do so.

It should be remembered that all gas attacks up to this time had been cylinder or cloud gas attacks, using chlorine or phosgene, or a mixture of the two, and that it had not been necessary to provide defense against lachrymatory gases. About this time the Germans began to use lachrymatory or tear gases in artillery shells, and when protection against these was afforded simply by goggles, to use lethal gas at the same time, thus forcing protection at the same time for the lungs and the eyes.

Endeavoring to increase the protection against lachrymators, against which the P. H. helmet was not very effective, an attempt was made to include a form of goggle in the helmet. Rubber sponges were fastened around the inside of each eyepiece, with an elastic band around the head to hold them in place, and the helmet was then called the P. H. G. helmet. This did not prove very successful, due to the difficulty of and increased time necessary to adjust it, and so was discarded.

In February, 1916, appeared for the

first time a mask of the box respirator type, called the Tarbox respirator. It was similar to the present British box respirator, except that it was two or three times as large. It was issued to staffs, artillerymen, and special troops in isolated permanent positions, and proved especially valuable in affording protection against long-winded attacks on special posts. It was too heavy and cumbersome to be used by infantry, and, like the P. H. helmet, suffered from a number of disadvantages, namely, it was extremely uncomfortable when worn any great length of time during a gas attack, as drawing the air through the fabric became difficult, and the breathing heavy; when very wet it occasionally burned the faces of the men, it deteriorated from exposure to the air, and did not afford good protection against lachrymatory gases; but, most important of all, practically the limit of protection obtainable by this type of respirator had been reached. It was therefore incapable of further development. So the present British small box respirator was devised and first issued to troops in April, 1916, or just about one year after the first German gas attack. Small quantities only were issued at that time, but by October 15, 1916, all troops had been supplied with this type of respirator.

The British small box respirator was an entire change from any previous mask. All masks previously issued depended for protection on the drawing of the air through layers of flannel or cotton impregnated with a solution acting as an antidote to the gas. The British small box respirator consists of a canvas satchel, divided into two compartments. The wall dividing the compartments ends about an inch from the bottom, having two eyelets or air passages. At the bottom of the right compartment is a spring upon which the canister rests. The canister, in the bottom of which is a rubber valve which opens while the air is being inhaled and closes when air is exhaled, contains soda lime, charcoal, potassium permanganate, sodium phenate, and hexamethylene, these chemicals either absorbing, neutralizing or oxidizing the gases as they pass through. A corrugated, flexible respiratory tube joins the canister and the elbow tube. The elbow tube, to which is attached the mouthpiece, also carries the outlet valve. An important feature of this elbow tube is the baffle which prevents saliva from running down through the tube to the chemicals, which would deteriorate them. A rubber mouthpiece, consisting of a flange which fits between the lips and the teeth, and two dental lugs which are gripped by the teeth, a nose-clip to prevent breathing through the nose, and glass eyepieces are provided. The face-piece or mask is of a material treated with rubber, impervious to gases, and with elastic tapes which fit over the head, thus holding the mask in place. This respirator is simply a filterer; the air passing through the inlet valve is filtered by the chemicals in the canister, then passes through the flexible tube and elbow joint into the mouthpiece, then down the bronchial tubes to the lungs, from which it is exhaled through the outlet valve. The chief objections to the British small box respirator were that the original face-piece was not impervious to certain lachrymatory gases, particularly chlorpicrin, and to the discomfort of the mouthpiece and nose-clip.

The earliest German respirators were simply pads soaked in a sodium-thiosulphate-sodium carbonate solution

These pads were replaced by a mask made of absorbent cloth, shaped like a snout, which fitted over the mouth and nose, the latter being closed by means of a steel spring, which spring was several times as uncomfortable as the nose-clip on the British box respirator.

The present type of German respirator came into use in the fall of 1915. It works on the same principle as the British and American respirators, in that the inhaled air is purified by passage through a canister filled with chemicals. It consists of a face-piece of leather (originally rubber was used, but due to the rubber shortage in Germany this was replaced by leather), which has been treated with a heavy oil, composed of 95 per cent mixture of coal tar and petroleum in equal proportions, and 5 per cent tallow. The enthracene is removed from the coal tar, leaving in the pitch, the presence of the pitch making the leather gas- and watertight. A small canister which contains the chemicals is screwed directly on to the face-piece. There is neither nose-clip, mouthpiece, nor valves. It is held in place by small spiral steel springs encased in cloth.

The canister originally contained three layers, one of which was Kieselguhr or granules of baked earth soaked in a solution of potassium carbonate, and covered with powdered charcoal, one of charcoal, and one of crushed pumice stone mixed with hexamethylene. In April, 1918, a layer of charcoal zinc and oxide was substituted for the layer of earth saturated with potassium carbonate.

At the same time, as a protection against diphenylchlorarsine and such smokes as stannic chloride, there was issued to German troops an extension which consisted of a perforated metal cover which fitted over the bottom of the canister, being held in place by three spring clips. The cover contains a disc of porous paper, which serves as a filter for fine particles. It is carried loose in the mask box and was to be attached to the drum whenever in areas which they were shelling with diphenylchlorarsine or whenever the Allies launched stannic chloride against them. This extension is not highly efficient, for while tests show that it more than doubles the resistance to breathing, the protection afforded is not nearly as good as that afforded by the small box respirator.

The German gas mask is inferior to either the British or our own in that it has no outlet or expiratory valve. The impure or exhaled air has to be forced out through the canister, which not only causes the wearer to continually breathe a certain amount of his own expired air, but, due to the continual passage of expired air and the moisture it carries, the chemicals in the canister deteriorate rapidly. It has no intake valve, simply a wire mesh over the hole in the bottom of the canister to prevent dirt and mud getting into the canister. Moisture gets into the canister, cakes the chemicals, and thus prevents the free passage of the air. Not having a nose-clip or mouthpiece, the wearer must depend absolutely upon the fit of the face-piece. In the case of the German mask this is a serious fault, as the face-piece, being of leather, tends to dry out and shrink, especially after having become wet. The canister is not strapped on the chest as is the British or American, but is fastened to the mask, so that the entire weight is not only a strain upon the mask but also upon the head and neck.

The tannon or mask which was is-

sued by the Germans to civilians behind the German lines consisted simply of a pad, soaked in certain chemicals, the principal one being hexamethylene. This pad is held in place by the hand over the mouth and nose, until the danger is past. When not in use it is folded and carried in a bag.

The German gas helmet for head wounds is similar in shape to the British P. H. helmet. It is made of two pieces of stout, impermeable rubber fabric sewn together at the edge, the seams doped to render them gas proof. The inside of the eyepieces are provided with lint pads fitting tightly around the rims to prevent the latter from pressing on the wearer's face. The helmet is attached to a drum exactly as in the standard German mask.

In adjusting the helmet, the canister is first screwed into it. The helmet is then drawn over the bandaged head and pulled down as far as possible. The coat is then buttoned over the skirt of the helmet and two tapes which accompany each helmet are wound around the neck. Finally, the helmet is everywhere pressed close to the head, and bandages placed around it, so as to leave as small a space as possible in front of the face.

The French mask in use at the time America entered the war, called the M^2 mask, consisted of thirty-two layers of muslin, impregnated with various absorbent chemicals, covered with a flap of waterproof fabric which protects the mask from rain and consequent deterioration of the chemicals. The mask fits the face tightly, the inhaled air being drawn through the impregnated fabric. The eyepieces are made of celluloid, and elastic straps over the head hold the mask in place. This mask is very effective and was carried by the American Expeditionary Forces as an extra mask. It was found, however, that the number of casualties caused by men changing from one mask to another (the British box respirator being put on first and causing some discomfort would be discarded by the man for the more comfortable French M^1 mask, during the course of which change many men inhaled the gas-laden air), it was withdrawn in May, 1918, and General Order No. 78, A. E. F., prohibited its being carried, except by labor battalions or other troops whose work was entirely in the rear areas and who were not likely to be called upon to enter the ready or alert zones. Later, as it was found that certain wounded and gassed men, while being moved from the front, were unable to wear the small box respirator, the M^2 mask was issued to stretcher-bearers to be used only for such contingencies. The disadvantages of the M^2 mask were that it had no outlet valve, the air having to be drawn in and forced out through the fabric, the extra time it takes to adjust it, and that the wearer depends entirely on the fit of the mask to the face.

Later the French equipped their troops with a mask very similar to the German mask, except that a rubberized fabric face-piece was used instead of leather, an outlet valve was added, and that a somewhat larger canister was used. This mask was very popular with the troops, but the objections taken to the German mask apply equally to this mask, except the shrinkage of the leather face-piece. This mask was called the A. R. S. mask. It was never issued to American troops.

The mask originally used by the Italians was very similar in type to the French M^1 mask. They discarded it,

however, early in 1918, in favor of the British small box respirator.

The Russian mask consisted of a box canister, to which the face or headpiece was attached direct. The headpiece was made of tubber and, when worn, covered the head, face and ears. It was not provided with either a mouthpiece or nose-clip and was most uncomfortable when worn for any length of time. The canister being filled with but charcoal, it did not afford a high degree of protection.

The first step taken by the United States upon the subject of gas warfare was on April 5, 1917, when a subcommittee of the National Research Council met, and plans were made for extensive research in all matters pertaining to noxious gases. This subcommittee, under the chairmanship of the Director of the Bureau of Mines, was composed of representatives of the Army, Navy, civilian chemists, gas experts and physiologists.

Immediately after the United States declared war on Germany, an American commission, composed of Professor George A. Hulett of Princeton University and Professor Amos of Johns Hopkins University, was sent to France, where they were joined by Maj. James R. Church, M. C., U. S. A. This commission carried on investigations in England, France and on the western front, that it might report upon the developments of gas warfare.

These gentlemen, after careful investigation and close study of the methods of offense and types of masks in use by the various nations as a defense, decided that the British methods of gas offense and defense were superior to those of the French, and that the masks to be worn by the American troops should be of the British small box respirator type.

Accordingly, upon their recommendations, which were concurred in by Col. Amos A. Fries, Chief of the Gas Service, American Expeditionary Forces, on August 22, 1917, 100,000 small box respirators were purchased from the British Government to equip the first of our troops arriving in France, which order was subsequently augmented by a second order for 300,000 additional respirators, and contracts were awarded and arrangements entered into in this country for the manufacture of gas masks upon a large scale.

The development of the mask by the Gas Defense Division progressed rapidly, several improvements, such as replacing the thin rubberized fabric of the facepiece, which was easily penetrated by chlorpicrin, by a better one, spun-in eyepieces, longer and wider outlet valves, far greater protection in the canister by replacing the unactivated wood charcoal by activated cocoanut charcoal, were made, with the result that the mask ultimately, as worn by our soldiers, had no superior in France.

While the ordinary smoke is an irritant to a certain extent, it is not harmful, but with the advent of nauseating smokes, such as the mercaptans and stannic chloride, it early became necessary to devise means of protection against smoke. This was done in January, 1918, by placing cotton pads between the chemicals in the canister. When the Germans began using toxic solids, such as diphenylchlorarsine, dispersed in high explosive shell, although they did not produce heavy casualties, means of filtering these solid particles from the air as it was breathed through the mask had to be devised, it being only a matter of time when some solid would be discovered which would cause heavy casualties. Finally, substances

were discovered which are not only efficient mediums for filtering solids, but also afford absolute protection against all smokes, and these are now component parts of the canister.

As the war advanced it became obvious that the United States must have a fighting mask, that is, it became more and more apparent that the side which had a mask that would enable its troops to go through gas and still maintain a high degree of fighting efficiency would win the war. Great efforts were made to develop a mask which would combine the relative comfort and good vision desired with safety. The principle of the French Tissot mask seemed to promise the best results. Many modifications of this mask were produced, but it was not until October, 1918, that an American Tissot mask was evolved and approved.

The American Tissot mask is a small box respirator, having all known desirable improvements in the canister, the face-piece of which is made of moulded rubber covered with stockinette. It has neither mouthpiece nor nose-clip. The inhaled air enters the mask from two tubes which open directly under the eyepieces, allowing the air to sweep across them, keeping both sides at approximately the same temperature and preventing moisture from condensing on the eyepieces, so that the vision is not clouded. Air is exhaled through an outlet valve.

Thus the standard American mask affords the highest degree of protection, together with being a mask in which a man can fight, work, and if necessary, sleep comfortably.

Only a brief description has been given here of the principal types of masks, and only of those actually used. No attempt has been made to describe the various experimental masks, from each of which some lesson was learned, and as a combined result of which we now have the present mask. Over 100 experimental types of masks were developed in American laboratories and for one reason or another discarded as impracticable, a sample of nearly all of which may be seen in the Edgewood Museum. From the experiments upon these many masks was perfected the present American Tissot mask.

Experimentation upon masks should not be permitted to be stopped. Just as the pad respirator was the best mask of its day, so is the American Tissot mask the best one we now know, but just as the pad respirator became obsolete so may the present mask become worthless against new compounds. It is safe to say that American chemists and American engineers are fully competent to keep pace with mask requirements, but only by a close coordination of effort will this be effected. The constant study of gas mask requirements is one of the duties of the Chemical Warfare Service, and just so long as that service remains an efficient working body will such research and study meet the needs of and keep pace with offensive development.

The Press and Army Reduction

THE House of Representatives has seen fit to include in the Army Appropriation Bill provisions for the reduction of the Army to a strength of 115,000 men. This action has apparently been based on the grounds of economy and, as has been stated, the "demands of the people."

The question that arises in this connection is as to the extent of this demand. Just how far downward do the people of this country want the strength of the Army to go?

It is a well-known fact that the press of this country reflects the attitude of the people with respect to the questions of national importance that come up from time to time. A newspaper that fails to do this does not continue for any length of time.

A review of the editorial comment over the period when the discussion of the strength of the Army was going on shows that the press of the country is not in accord with the views of the members of Congress who are leading the attacks against the Army.

Here is what some of the leading papers say:

In attempting to save money by reducing the Army below the strength needed to maintain garrisons abroad and to train the National Guard and reserves at home, the Military Committee of the House returns to the same kind of economy as was practiced when a former Congress refused to prepare for a war that every unprejudiced man of ordinary foresight saw to be inevitable. We saved millions then at the cost of billions in 1917 and 1918, and we did not begin to fight on any scale till we had been at war for fifteen months. That is the idea of economy that prevails among the politicians that are now sent to Congress.—*The Portland Oregonian.*

A group of "little army" men in Congress is trying to get this nation to cut its standing army down to 115,000 men. They do this in the face of the best military advice. Experts agree that a permanent military organization of 150,000 men is necessary.

The Army consists of three branches. There is the Regular Army, consisting of a small force of professional soldiers. Then there are the National Guard and the Organized Reserves. The nation's defense in time of war rests in the first stages on the small center comprising the Regular Army. Nothing in American history indicates that this force should be cut to the quick. Such a proposal, however, was to be expected. It has come in the wake of every war; and invariably has produced expensive, if not disastrous results.—*The Minneapolis Journal.*

The size of the Army next year should be determined not by war needs but by peace needs. There may be no immediate threat of war. But our military system has just been reorganized and modernized. Its permanent value depends on the maintenance of a sufficient home force to keep the new machinery from rusting. Secretary Weeks feels that 150,000 men are needed for this purpose. Chairman Kahn of the House Committee on Military Affairs wants 143,000. Those on whom the lessons of our pitiful unpreparedness in 1917 have not yet been lost would rather err in having the margin on the safe side. Temporary economies through over reductions have to be paid for later. An adequate force for the work to be done is the best economy.—*The New York Tribune.*

It is difficult to think patiently of the action whereby the House of Representatives adopted the scuttling recommendations of the Military Affairs

Committee and, in spite of the earnest protests of the President and the Secretary of War, passed a measure which, if enacted, will wreck the American military establishment both immediately and potentially. Nor is the more vicious feature of the measure the part of it which requires reduction of the standing army. The thing that cuts deepest in the end, and which is potent to have the most permanently deleterious effect, is the reduction of the War Department's estimate of $4,000,000 for the Reserve Officers' Training Corps to $250,000.—*The Detroit Free Press.*

It is hard to find any justification for the attitude of the "micro-army" advocates in the House, and perhaps least of all on the grounds of economy. Many millions of money have been spent during the past few years for development of a high class and sufficiently numerous officer personnel. Now the benefit of much of this expenditure is to be irretrievably lost if the slashing gestures of some of our thrift legislators are not parried.—*The Washington Herald.*

The General Staff publishes figures showing that the United States stands at the bottom of the list of nations in the number of troops it maintains for national defense. These figures show that for every dollar expended by the United States for the maintenance of its land defense France expends $7, the British Empire $4, and Italy $2.

We are not a militarist nation; we are a peaceful people; but we should not, therefore, forget the lessons of the recent past; nor should we close our eyes to the fact that a menace is rising in the East that promises to involve the entire world in a new trial at arms at no distant date. If Lord Northcliffe's judgment is to be trusted, the rejuvenescence of Pan-Islamism must soon be reckoned with. The United States could not stand apart, alone, if Christendom should be called upon to meet the shock of Oriental assault.

The Secretary of War and General Pershing insist that already the Army has been reduced to a dangerous minimum, that an army of 115,000 is not sufficiently large to conduct even necessary routine duties.

But what does a mere Secretary of War or the Commander-in-Chief of the American forces during the world conflict know about such things? We are at peace; human nature has been regenerated; and the country safely may trust to its omnipotent Congress to preserve it from foes within and foes without its gates.—*The Cincinnati Enquirer.*

The possibility of a presidential veto of the Army Bill if it passes with the House provisions reducing the officer personnel to 11,000 and directing the War Department to strip the defense of the Panama Canal Zone and Hawaii has no effect on the little-army men. They are determined to show the country they are on guard against militarism and extravagance. . . .

As, for instance, in the policy of the General Staff to keep full army divisions in the Canal Zone and Hawaii. But what the country wants is effective defense of the canal, and if the difference between effective and noneffective defense is the difference between the cost of a full division of troops and a skeletonized division as provided by the House, the country will take the higher cost, whatever it may be. And on that point of effectiveness the General Staff is likely to be a better judge than the House Committee.

The country wants economy, but it does not want niggardliness or foolhardiness in providing for the national defense. It has economy in the budget and it has competent military advice in the War Department, and when the two agree on an army estimate further economy or further advice by a House Committee does not seem to be called for.—*The Kansas City Times.*

While the existing limit on the Army is 150,000, it has, as a matter of fact, only about 137,000 men. The fact that it remains at this size through the natural force of present conditions is a fact to be given consideration in deter-

mining the size of the future. At that size scope is afforded for developing specialists of high technical skill, maintaining the officer corps in efficiency, guarding public property, garrisoning posts with squads or larger contingents and providing details for the Mexican border and certain foreign duty. As War Department needs, rather than an arbitrary limit, have determined the present size of the Army, so those needs should determine its size in the future, and the departmental appraisal of needs shows that with less than 137,000 something must be sacrified in organized readiness and efficiency.—*St. Louis Globe Democrat.*

It is to be remembered that the nation now has a bureau of the budget. The elimination of inefficiencies and of resulting wastes is the function of this important bureau. It is a function that is being capably discharged. Congressman Anthony is not dealing with wastes at all. He and his fellow-committeemen are dealing with certain projects, certain policies, American military defense, as proposed by the War Department and by the President.

For what is it that happens to us at this moment? Important national policies—policies regarding a citizen army, policies for building up the citizens' military training camps, the Officers' Reserve Corps, the Reserve Officers' Training Corps and the National Guard—go from the President to a little subcommittee of Congress, where after a little testimony taken from War Department officials, but after no public debate whatsoever between the President himself and his congressional opponents, those policies are reduced in some cases to shadows and in some cases virtually to zero.—*Chicago News.*

These are only a few of the protests that have appeared. Nearly every paper in the country has had something to say on the subject, and the great majority are anti-reduction in their sentiments.

Happily the question is not finally determined with the action of the House. The Senate must be reckoned with. We have faith in that body that they will not permit the Army to be reduced to the number proposed by the House.

Harriss-Collier's Signals

The Harriss-Collier's signals are obvious and instinctive. The driver behind you will understand them without having first pored over a diagram. There are no angles to remember.

1. To turn left—you extend your arm and point the first finger to the left.

2. To stop—extend your arm with back of hand to the rear.

3. To back up—extend your arm and motion with palm of hand to the rear.

4. To turn around—circle arm and hand three times.

A Drill Experiment

By A. B. Carson

PRECISION in close-order drill seemed an impossible task when Company A was assigned to a tiny town snuggled between steep hills and the Moselle River. The single cleanly paved street was wide enough, but a constant stream of motor vehicles on the way to Coblenz prohibited troop use. All other streets were wide enough for only four files. The strip of country between the town and the foothills was soft and oozed water. Scouting parties discovered the nearest ground suitable for close-order drill to be at the top of a mountain. To reach this point required forty-five minutes' marching up a steep, winding road.

Army orders stressed precision—precision—precision. Division brigade and regimental commanders demanded precision. Company and platoon commanders were at their wits' end. The men, fresh from the trenches, needed constant supervision to insure neatness, and close-order drill was vital.

Gazing over the river shortly before taps one night the swift remembrance of the British command *Form fours* came as an inspiration. Why not? Form fours and drill the entire company in the narrow streets. The thought was the father of the deed, and by morning a complete manual based on what seems to a nonprofessional soldier to be a novel idea was completed.

The base of the drill was somewhat similar to the Langres service school *gang system*. Sixteen men formed the basic squad. This square squad could be maneuvered into any position by simple, close-order commands. The number of every man in the square squad changed with nearly every command. This required mental alertness as well as mechanical precision.

For the sake of clearness assume that a single square squad was called to attention. The squad depth filled the width of the street. At the command *Count off* the men followed the usual squad count. But instead of there being one of each number in each of a squad rank there would be two. One squad was behind the other.

Obviously the command *Squads Right* would be impossible to execute. Instead the command *Right Face* was given. Thus No. 1 of the rear rank of the rear squad becomes No. 1 of the front rank of the front squad. If the command should be *Left Face*, No. 4 of the rear rank, rear squad, would become No. 1 of the front rank, front squad.

The command *Forward March* was given. When the square reached the narrow street turning, the commander, instead of giving *Right Turn*, would permit the squad to pass until the end reached the turn and then command *By the Right* (*Left*) *Flank*. Again the alignment and numbers would be changed. By commanding *To the Rear* another change would occur. Endless variety was possible by giving *Right* (*Left*) *by Twos* or by *File*. By frequent switching mental alertness and interest were insured.

And, merely as an afterthought, at the first review in an open field, the company was complimented for precision.

Notes from the Chief of Infantry

The 80 per cent Qualifications.—The target season for this year is close at hand and without a doubt all infantrymen are keenly interested in bringing their organization to such proficiency as will insure them qualifying the minimum of 80 per cent.

It is believed that in some instances there still exists the belief that 80 per cent as a standard is too high, but it has been demonstrated time and again by different organizations that this standard is attainable by *all* organizations which are correctly instructed in the system of rifle shooting as set forth in Rifle Marksmanship.

A recent example of this is the record made by the 42d Infantry. It will be remembered that the enlisted personnel of this regiment is exclusively Spanish speaking. The officers were compelled to give their instruction through interpreters, but, in spite of this severe handicap, the regiment qualified 91.4 per cent of its riflemen. In reports so far received, many organizations of the Marine Corps, who follow the system of Army Marksmanship, have qualified 95 to 100 per cent.

Gen. Fox Conner reports from Panama that "Rifle Marksmanship is the best instructional manual ever turned out by the War Department." While this may be true (it does not matter how good the text may be unless it is followed minutely and wholeheartedly and with interest and enthusiasm), it will not produce results. Many instances are known in which the methods therein prescribed are not completely followed, certain parts of the instruction being omitted and other changes made that are based on past experience rather than on the system now prescribed.

One common fault appears to be the hastening of completion of target practice by reducing the time allotted for the work. Others have failed to utilize the time of the men while awaiting their turn to fire or have assigned too many men to each target (the maximum should be *ten*, and should not go above *eight* if it can possibly be avoided); also, in some cases, advantage has not been taken of the presence of graduates of the Infantry School, who have taken the course of instruction, and who are usually the best qualified instructors in this system available in the regiment.

Unofficial news from one of our infantry regiments shows an excellent start in its record firing. At the end of the first week a total of 106 men had fired on the range and 105 of them had qualified—39 experts, 42 sharpshooters, and 24 marksmen. This makes a little more than 99 per cent and establishes a mark that all organizations will have to work hard to better.

Other units in the regiment are now on the range and have begun preliminary firing. Their scores, as a whole, are showing the results of careful instruction back of the line.

The regimental commander has offered a silver cup as a regimental trophy, to be awarded the company making the best record in the regular target season. With this award in prospect, an incentive is provided for each company to put extra work on its poorer shots. The trophy will remain in the possession of the winning company until the next target season, when

it will be put up again for competition.

While the final record of this regiment remains to be seen, it shows what some regiments are doing with Rifle Marksmanship. It is not just sufficient to try and beat last year's target record, but to try and make the best record in the infantry. A strict observance of the principles of Rifle Marksmanship is the medium through which success may be attained.

It is believed that no difficulty will be experienced in attaining the 80 per cent qualification, *if* the system is followed with the *utmost* attention to detail. *Try it and see.*

Communications. — Some infantry regiments are increasing the field efficiency of their communications platoons by utilizing the personnel and equipment in the daily handling of communications needed in the garrison. Such a scheme will not only serve to make proficient specialists but will also give essential training in team work. Problems will arise which will parallel those met in combat and will familiarize the personnel with the best method of solving them. It will perhaps not be feasible to utilize daily the means of communication furnished in combat, but it is entirely practicable to set aside certain days during the month when organizations within the regiment will be required to install, operate and maintain the field communications. On such days it is advisable to prohibit the use of permanent installations.

The following plan is suggested as a practicable application of the foregoing idea:

Make full use of all the means of communications. Establish message centers in all organizations and require that message center procedure be strictly followed. Lay field wire between all headquarters which in combat are furnished with wire communication, thus affording the use of field telephones and switchboards and the utilization of buzzer phones and service buzzers. Require radio sets, when supplied, to send and receive messages between battalions and between the battalions and the regiment. Also use signal lamps and flags between units so equipped. The use of runners is advised when appropriate.

It is also suggested that the regimental communications officer be placed in charge of the entire system, assisted by battalion communications officers. It should be their duty to prepare interesting problems, based on local conditions. For instance, in regiments without radio sets, assume that the radio sets have been destroyed and that the commander must depend upon some other means of communication. In addition, assume that certain areas are swept by enemy fire and that runners are unable to pass through these areas, thus necessitating the use of visual or other means of signalling. By assignment of code names to the headquarters and other stations and requiring them to send all short messages in code, personnel will be familiarized with code systems.

It is realized that such a plan will, when first tried, result in considerable delay in handling routine regimental business, but with increased use will come increased proficiency. Communications platoons trained along these lines will be able to function in field problems with little additional instruction.

In connection with the above subject, an infantry officer gives the following account of a significant incident of which he was an eye-witness.

One day in March, 1912, I sat in the office of the commander of the Marine

Corps Legation Guard at Peking. It was a time of vivid events. The reigning imperial dynasty was on its death bed. The political and military situations were intense. The atmosphere was surcharged with apprehension of all sorts. Marines guarded the great city walls and gates overlooking the American Legation. Sentries stood in pairs behind barbed-wire and sandbag barricades to intercept approach from the turbulent quarters of the city. Patrols moved along adjacent streets, on the top of the cliff-like wall, and even the outlying country roads were scoured by mounted American and other foreign detachments on the *qui vive* for signs of danger. The Legation compound presented a scene of that orderly confusion characteristic of recently arrived troops, "shaking down" in new quarters, hurrying messengers, busy artificers, etc.

The quiet of the commandant's office was interrupted by the entrance of a young marine, who stood respectfully anticipating recognition. Prefacing his words with a snappy salute, the messenger, as he proved to be, delivered a verbal report of such length, clearness and detail as to utterly astound one brought up under the idea that verbal messages should be brief and confined to simple details. His words were well chosen to give a concise picture of several independent occurrences as observed from a lookout station in one of the gate towers.

On inquiry, I learned from the commandant that such messages were not exceptional in the daily routine of the garrison. *The training given was such as to enable the marine to receive and transmit such messages* as the one I had heard repeated. The commandant's attitude seemed to ask "why not?"

Details to Civil Educational Institutions.—Further study has been made on the method of detailing infantry officers to civil educational institutions under the provisions of Section 127-a, Act of June 4, 1920, as mentioned in the March, 1922, issue of the INFANTRY JOURNAL. The plan under consideration is twofold: First, to secure the names and locations of institutions of high standing throughout the states which offer suitable courses for infantry officers at reasonable tuition charges; and second, the grouping of these institutions by corps area to conserve mileage funds when officers are detailed under the above act.

The best interests of the service require that officers take courses in the Special Service Schools of other branches. However, courses in such subjects as Psychology, Pedagogy, General Education, Economics, Social Science, International Relations, Philosophy, Foreign Languages, Historical Research, and Business Efficiency must be pursued at an approved civil institution or industrial plant.

The General and Special Service Schools or the Military Academy may request that certain officers be detailed to an institution under the provisions of Section 127-a to pursue a course not included in the subjects referred to above. In this event, it is the policy to approve the detail.

The funds allotted each year for the purpose of detailing infantry officers to civil institutions or industrial plants under the provisions of this section, together with the tuition charges of the institutions selected, will determine the number of infantry officers that it will be possible to detail from year to year.

Mission of Tanks.—The problem of the proper employment of tanks has been a matter of continuous study in the office of the Chief of Infantry, also by the Infantry Board and the Tank School. There have been minor differences of opinion, and no definite mission has thus far been assigned to tanks

by the War Department, but the following statement, compiled in the Office of the Chief of Infantry, probably reflects the best thought to date on the mission of tanks:

MISSION OF TANKS

1. Tanks are employed where the terrain is practicable for their use and where their assistance is necessary to facilitate the uninterrupted and economical advance of riflemen in attack.

2. *In an attack against a prepared enemy position.* Tanks precede the advancing infantry, break through barbed-wire entanglements and cross organized terrain, opposing his concentrations of fire power whether they consist of machine guns, small arms or other tanks. They crush machine-gun nests both by their weight and by their fire, and destroy personnel. When forward artillery or anti-tank guns are located by tanks already engaged, some of the tanks may be concentrated upon their destruction if other tank units are not available for such purpose. On occasions they must be able to fire into an enemy trench at short range. Ability to cross trenches and small streams is essential. Closest cooperation between tanks and the riflemen is essential—tanks must therefore be capable of being run at the speed of the foot-soldier.

3. *In warfare of movement.* Before the time arrives for their use, tanks will accompany their assault battalions in column so as to be available immediately when needed. In such an advance, before they are needed to enter the fight, the tanks will advance by bounds from cover to cover in order to reduce the effect of the hostile artillery fire.

When the scouts locate combat groups, strong points, or machine-gun nests, the firing line is built up and the flanking movement is started. The battalion commander must estimate the situation and, if the resistance is strong enough to require the use of tanks to overcome it, he should give the necessary orders to the tank commander, who should normally be with him.

Upon receipt of his orders, the tank commander sends forward the necessary tanks to reduce the resistance. Such tanks deploy, pass through the riflemen, and attack the positions designated.

The tanks which go forward to attack the position converge on it at their greatest speed, attacking the personnel and the guns with fire and weight. Speed is essential in getting to the enemy guns.

Tanks not involved continue forward, conforming to the movements of the assault echelons in rear of which they are moving, and as soon as the resistance has been overcome and the position occupied by the riflemen, the tanks reassemble, and the advance continues as before.

4. Tanks are particularly valuable, in case of a "break through," or when the enemy is retreating, to exploit the success and to keep contact with the enemy by patrolling well to the front. They break through the last formed bodies of the enemy, spread confusion in his rear artillery positions, obstruct roads by killing draft animals or wrecking trucks, and, where possible, press around a column to its head and delay the retreat by occupying bridges and other defiles. Speed, a large cruising radius and an adequate supply of ammunition are essential to success of such a mission.

5. Tanks are attached to an advance guard when the rapid advance of the latter is essential. They are then of value in brushing aside hastily organized enemy machine-gun resistance.

6. Tanks are used in rear guards when retreating force is demoralized and pursuit by enemy is vigorous. Speed, large cruising radius and adequate ammunition supply are essential.

7. Tanks constitute a valuable weapon against enemy tanks. In tank actions, speed and power to maneuver quickly are especially important.

8. Tanks, on occasion, need facilities to provide a smoke screen for their own protection.

9. Tanks are used on the defensive, in counter-attacks to inflict casualties

on the enemy, to destroy his morale, and to break up his organization. They maneuver with boldness and speed and frequently push well ahead of riflemen with whom they are operating.

Infantry R. O. T. C. Camps, 1922.—During the coming summer there will be one Infantry R. O. T. C. Camp conducted in each corps area, except the 9th Corps Area, in which two camps will be conducted. This is on account of the great distances separating the infantry units in that corps area.

These camps will be conducted at each of the following locations: Camp Devens, Mass., Plattsburg Barracks, N. Y., Edgewood Arsenal, Md., Camp McClellan, Ala., Camp Knox, Ky., Camp Custer, Mich., Fort Snelling, Minn., Fort Logan, Colo., Camp Lewis, Wash., Presidio of San Francisco, Cal.

A proposed program of instruction for the next Infantry R. O. T. C. Camps was prepared shortly after the completion of the camps conducted last summer. This proposed program of instruction was submitted to all corps area commanders, camp commanders and senior instructors of the 1921 Infantry Camps, to certain officers on duty with Infantry R. O. T. C. Units, and to the Infantry Board for comment, suggestions and recommendations. Many improvements were made possible, due to the valuable suggestions and recommendations received from those to whom it had been sent for criticism. It has been approved by the War Department and copies furnished the commanding generals of all corps areas, the Commanding General, Hawaiian Department, and to all professors of military science and tactics at infantry units.

The distribution of the program for the 1922 camps to all P. M. S. & T.'s was made so as to enable all officers on duty with infantry units to visualize the training for the coming summer and also to familiarize the R. O. T. C. students with the training requirements of the program.

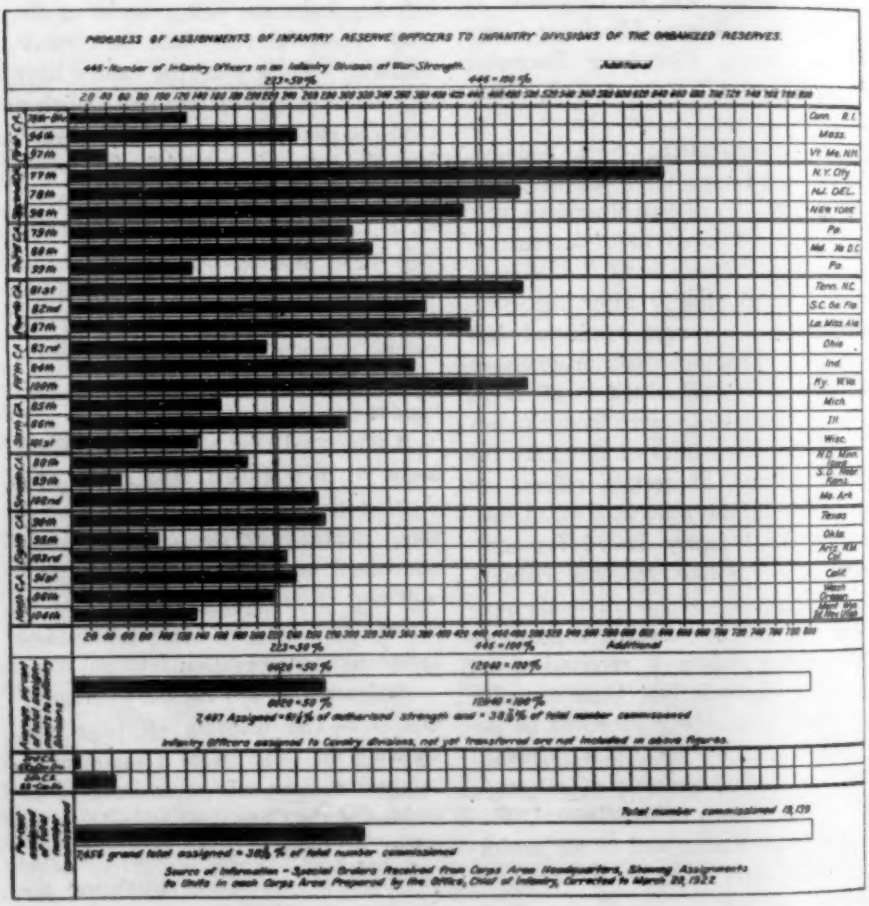
The most careful thought and consideration have been given the infantry camps by corps area commanders in matters pertaining to the locations of the camps as well as in the selection of the personnel to form the administrative and instructional staffs. The infantry units are now completing the most successful year since their establishment. Each year the camps have been more successful and more efficient than the camps for the preceding year. It is the hope of the Chief of Infantry that the improvement of Infantry R. O. T. C. Camps for the coming summer will be in keeping with the great improvement of the infantry units during the present school year and that the camps conducted this year will prove the most efficient and beneficial yet conducted.

It is desired that *all* infantry officers assist to their fullest capacity in conducting the infantry camps this summer. Those who are only indirectly concerned may assist with their good will and those in a position to be of direct assistance, by their hearty and sympathetic cooperation.

Assignments of Infantry Reserve Officers.—The diagram on page 562, showing the progress of assignment of infantry reserve officers to infantry divisions of the Organized Reserves, may prove of interest and value. It was prepared to assist in visualizing the development of divisional units of the Organized Reserves *from an infantry point of view.*

It is not the desire of the War Department to cause or encourage competition among the divisions for the assignment or attachment of personnel. The following is quoted from a letter issued by the Office of the Adjutant General, under date of March 27, 1922, on the subject of Organized Reserves:

In this connection, it should be noted that no definite date has been set by the War Department for the completion of the organization of Reserve Units. The publication of monthly strength returns and information bulletins should not be construed as indicating the War Department's desire for rapid progress at the expense of careful and well considered ground work, particularly with respect to assignment of officers to units. It is feared that in some cases assignments are being made without a full and sufficient examination into the qualifications and general suitability of reserve officers, in order that substantial gains may be reported each successive month.



Varied Ground

100% Target Record

Company C, 14th Infantry, commanded by Capt. John D. Joanidy, 14th Infantry, in the Panama Canal Zone, comes to the front with a clean 100 per cent record in the target practice season completed early in March.

Of the 58 men of the company who participated in the firing the following results were attained:

Expert Riflemen	8
Sharpshooters	26
Marksmen	24
Total	58 (100%)

The average score of the company was 278, only 5 men making below 262. Private, first class, William D. Garrett made the high score of 181 in slow fire. His scores at the several ranges were:

200 yards, standing	42
300 yards, kneeling and sitting	43
500 yards, prone	49
600 yards, prone	47
Total	181

Private, first class, John Kukuczka made the high score in rapid fire. His scores at the several ranges were:

200 yards	50
300 yards	48
500 yards	43
Total	141

With the exception of a very few, all the men of the company are serving in their first enlistment period.

Captain Joanidy attributes much of the success of his company to the proper use of the Infantry Score Book. He says:

This report would not be complete were I to omit mentioning the great assistance rendered by the Infantry Score Book, published by the United States Infantry Association. This invaluable guide to good shooting proved to be a real asset to the men. Its convenient size easily fits the shirt pocket, and it can be carried by the soldier at all times. The illustrations and information covering the various firing positions, the deflection and elevation rules, the use and adjustment of the gun sling, and especially the description of every step used by the firer from the moment he adjusts his sling to the time he calls his shot, is 'just the kind of dope' the average soldier wants to read and understand. Its rules were strictly adhered to. In short it proved to be a real catechism to the company.

Those of us who have been through a target season in the Panama Canal Zone are familiar with the trials that beset the firer, changeable winds and temperature making the problem very difficult.

Captain Joanidy is to be congratulated on his achievement.

* * *

DRY AGENT: "When do you consider a town to be dry?"

WITNESS: "I would say that when you have to pin postage stamps to letters and there's not enough moisture to grow wild oats, that the town would be dry enough for all practical purposes."

* * *

Two Thoughts

Two thoughts come to us. Yesterday's mail brought three orders from subscription agencies to the INFANTRY JOURNAL. Naturally we were glad to receive these subscriptions, but it did astonish us somewhat to find that they were from infantry companies in the Regular Army, because we have tried in

season and out to impress on every company commander that he should send his subscription to the INFANTRY JOURNAL direct to us. And not only subscriptions to the INFANTRY JOURNAL, but orders for all the other periodicals for his company.

Our Book Department maintains a regular magazine subscription department and is prepared to handle any order, large or small, with a guarantee that the prices charged by us will be as low, or lower, than those quoted by any other responsible agency. Why, then, should we not have all of your orders? We may save you some money, and we certainly will not charge more than others. Furthermore, by dealing with us you are helping to maintain your own Association and to show your interest in our efforts.

The other thought that comes to us is that a good many officers who are readers of the JOURNAL are not members of the Infantry Association or direct subscribers to our magazine. We are glad these officers read the INFANTRY JOURNAL, but we are disappointed in not having their names enrolled in the Association. Now, a subscription in and of itself alone is not a paying proposition, because the JOURNAL costs us more to produce than we get for it—by about 60 per cent; but every direct subscription tends to reduce this percentage, for the reason that it costs more pro rata to print 5,000 magazines than it does 6,000. More important, however, is the fact that a large number of paid subscribers is a big asset when it comes to securing advertisements. And in the final analysis it is the advertising revenue which makes up the deficit in production costs.

So the answer is: Send all periodical orders for yourself or your company to our Book Department and individually subscribe to the INFANTRY JOURNAL.

* * *

A Virginian, recently elected judge and feeling keenly the responsibilities of his exalted position, was coming on horseback along a road in a remote section of his district. He saw a smoke on a hillside.

"Boy," he said to a lad who was loafing alongside the road, "is that smoke up there from a still?"

"Yes, sir, I reckon it is," the boy replied.

"What are they making up there?"

"Might be makin' some apple brandy."

The judge jumped from his horse. "Here, boy," he said, "hold this horse. I'm going up there and stop that. They can't flout the law in that manner in my district."

The boy took the reins, and the judge climbed the fence and started towards the smoke. After he had gone a few steps the boy shouted:

"Oh, mister!"

"What is it?" asked the judge.

"Effen you don't come back, what must I do with the horse?"

* * *

The Miners' Strike

There never has been a time in the business history of our country when a situation had such clean-cut, forcible lessons for each and every citizen as those afforded by the present coal-mining dispute. First, there is the question of what would happen to the nation if any organization of workmen were to get absolute control of all the sources of production of a vital commodity like coal. Right now, in the face of a falling market for commodities and wages, the miners' union demands higher wages, knowing full well that the great economic evil of the present moment is the disparity in wages, or lack of balance that now exists in our industrial life. If the United Mine Workers controlled all of the nation's coal mines, their demands doubtless would be even more exorbitant and their chances of success would be great indeed.

TRAMP: "I believe yer dog likes me, lady. He wagged his tail at me when I come in."
HOUSEWIFE: "Perhaps he was just thinking of all the fun he's going to have with you when you go out."

* * *

Memorial Day, 1922

BY LIEUT. R. F. HAMILL

Hear the tramp of ghostly feet upon the city streets!
Hear the martial cadence that the phantom drummer beats!
See them marching, rank on rank, erect and unafraid;
The Army of the Noble Dead is marching on parade.

No tears for these, no maudlin words, only a solemn pride.
All fearlessly they went to war, and like true men they died.
To give their lives for liberty was their inheritance,
And bravely did they fight and fall upon the fields of France.

See the gallant swing of them as they go marching by!
Pride in every sturdy step and pride in every eye.
See the flash of sunlight brighten bayonet and blade!
The Army of the Noble Dead is marching on parade.

* * *

"Yes," said the old man to his visitor, "I am proud of my girls and would like to see them comfortably married, and as I have made a little money they will not go penniless to their husbands. There is Mary, twenty-five years old, and a really good girl. I shall give her $1,000 when she marries. Then comes Bet, who won't see thirty-five again. I shall give her $3,000, and the man who takes Eliza, who is forty, will have $5,000 with her."

The young man reflected a moment and then asked, "You haven't one about fifty, have you?"—*Glasgow Herald.*

Petrograd Port Conditions

A Hamburg correspondent writes that a Norwegian captain, who has just returned from Petrograd, gives an interesting account of the chaotic conditions prevailing at that port and of the difficulty encountered in getting vessels unloaded. In the case of his particular ship, the discharging of cargo was begun on a Saturday. As the following Monday was a holiday no work was done on that day. On Tuesday a heavy snowstorm prevented the ship from being unloaded. On Wednesday one gang of laborers worked for one hour only.

After that better progress was made, but there was a continual shortage of workers, some of whom had to come great distances in order to reach their place of work. Winter had set in early, and the cold hindered the work of unloading considerably. Both men and women workers were employed, who received no money for their labor but were given a certain amount of bread instead. They were thus without any incentive to speed up their labors. At the end of every hour work was halted for a short time, which period was called "smoking time." The laborers worked from 10 a. m. to 3 p. m., which five hours constituted a full day's work.

The entire harbor district is patrolled and watched by armed guards who allow no one except the workers admittance. On going ashore these, as well as members of the crew, are carefully searched. The seat of the Soviet administration office is in a large building just outside the harbor district. It contains a large number of offices, and some 300 clerks are employed therein. The utmost disorder prevailed everywhere, and the establishment was without any efficient head, for it is a rule

of the Soviet Government that everything must be run by a commission instead of by a single individual. All the rooms are unheated, poorly supplied with water facilities, and badly lighted.

The captains of the ships which happened to be in port had to call every day at this administration building and to make a formal request for the unloading of their ships. Profuse promises were always forthcoming that the cargoes would be promptly unloaded, but little was done to make these promises effective. In one case a ship had been twenty-six days in port without its cargo having been touched.

[These are the conditions that Lenin and Trotsky would impose upon the whole world if they had their way.—EDITOR.]

* * *

The Man of the Hour comes not from that vast army who eternally watch the minutes speed by on the clock.

—

Who won the strike? The railroads and the unions both claim the victory. The public must again be the goat.

* * *

The Army Mutual Aid Association

The fiscal year for the Army Mutual Aid Association ending on March 31, 1922, finds the Association in excellent financial condition and with the satisfaction of having enrolled the largest gain in membership of any year of its history.

There were enrolled 638 new members for the year ending February 28, 1922, which after deducting the casualties and the customary losses through lapses will cause a net gain in membership of 543. The total enrollment on March 31 was 2,278 with 107 applications awaiting action by the Executive Committee.

Little Eleanor gazed long and thoughtfully at the young man who was calling on her grown-up sister, Kate.

"May I climb upon your knee, Mr. Browne?"

"Yes, of course, dear," smiled the young man, who wanted to make a hit with the family. "Want to pull my hair, eh?"

"No; I want to see if I can find that word."

"Word? What word?" asked the puzzled visitor.

"I heard our Kate say this morning that if ever a man had the word 'idiot' written all over his face it was you."—*Toronto Telegram.*

* * *

Putting the Stored Auto in Commission

A car that has been in storage all winter requires certain attention before it can be put in commission in the spring. One of the leading auto mechanics of the country has stated a few things that should be done:

If the car was performing nicely before putting up for the winter, very little need be done; in fact, nothing to require the attention of a mechanic.

The following is about all that should be necessary:

Drain motor of all old oil and clean thoroughly with kerosene. Refill with fresh supply of good oil. Clean transmission case flush with kerosene and refill with fresh lubricant. It requires approximately three quarts for this. Drain old lubricant from rear axle differential, flush with kerosene and refill. Two and one-half quarts for all semi-floating and 3 quarts for all full-floating axles.

Remove front wheels, cleaning bearings and hubs thoroughly, and repack with grease.

The foregoing covers lubrication of the main units. Clutch bearing, universals, spring shackles, steering gear, steering spindles, fan bearings, rear axle and bearing, brake shaft, steering, reach and connecting rods are no less important. A good practice is to follow systematically all lubricating points on one side of car, starting at front and working to rear, or from rear to front,

and then go over opposite side, in like manner.

Additional comfort can be obtained as well as adding to the life of the springs by lubricating between the leaves. If no leaf wedge or spreader is at hand, a screwdriver can be used by driving between leaves at a point near the end of each lower leaf. Use a thin oil into which has been mixed a small amount of graphite or what is known on the market as "oildag," squirting between leaves with hand oiler, allowing the oil to drain toward center of leaf before removing screwdriver.

Clean and set spark-plug points. Clean and reset breaker points. If storage battery has not been placed in storage, have battery inspected and recharged, if necessary, by battery expert.

* * *

The printer in the open shop set up a poster to advertise an address by a militant suffragette. Her subject was, "Woman: Without Her, Man Would Be a Savage." When the speaker called for the posters the proofreader had to leave town suddenly, for the flaming sheet read, "Woman, Without Her Man, Would Be a Savage."—*American Labor World.*

* * *

Journals Wanted

We need the following back numbers of the INFANTRY JOURNAL to complete several volumes for officers who are having them bound for future reference.

April, 1919.
December, 1920.
January, 1921.
June, 1921.
August, 1921.
September, 1921.
December, 1921.
February, 1922.

Officers who happen to have any of these back numbers and wish to help their fellow-officers in completing their volumes will favor us by forwarding copies to the Association and will be reimbursed for their trouble.

The Whiner

BY CAPTAIN GERALD EGAN, INFANTRY

God, in your goodness, guide me
Far from the Whiner's wail,
Far from the moan of the Malcontent
And the slime of the Sobber's trail.

Spare me the Soldier "who views with alarm,"
Greeting each task with a tear,
Charging to others the will to do harm,
Building intrenchments for Fear.

Keep me away from the "whispering kind,"
Plausibly planning for Discord and Strife;
Constantly "picked on," cowards in mind,
Reeking with rumors, lying through Life.

Puffers in public, eyes on the crowd;
Jealous of comrades, toadies to caste;
Taking the plaudits when plaudits were loud,
But, when the test comes, unable to last.

Conjuring specters of Prussians and Dread,
Glib with excuses, glad to defame
Men of their calling—both living and dead,
Whom courage impels to stick to the game.

God, in your goodness, give me
A place among marching men,
Who carry their trials to the end of the route
And are ready to start again.

* * *

Special—This lot 400 pairs Men's Shoes in black calf skin, English and high toes, button and lace, dress and semi-dress Shoes. *They won't last long.* Sale price, per pair, $2.95—*From an ad in the Vicksburg Evening Post.*

Legion Policies for 1922

The Third National Convention of The American Legion decided:

To support the Veterans' Bureau in every way to carry out the plans for hospitalization and handling of claims, insisting that the letter and spirit of the law be observed in decentralizing the agencies for the benefit of disabled ex-service men and that politics must not interfere with the bureau's work.

To continue the Legion's stand for the Adjusted Compensation Bill and to fight for its earliest possible enactment.

To adopt the daisy as the official flower in place of the poppy.

To continue its opposition to immigration and naturalization of Orientals.

To ask a suspension of all immigration for five years, and to ask the strictest examination of immigrants at ports of embarkation in the absence of a restriction law.

To urge legal punishment for disloyalty in the schools.

To oppose a pardon for Eugene V. Debs and to insist on the return and prosecution of Grover Cleveland Bergdoll.

To support limitation of armaments while insisting upon adequate military protection for the United States.

To recognize officially La Societé des 40 Hommes et 8 Chevaux as the "Legion playground" and to consider the establishment of a Fathers' Auxiliary.

To hold national dues at $1 for a full year, 75 cents for members joining after July 1, and 50 cents for members joining after October 1. Half the profits of *The American Legion Weekly* to be distributed among departments in proportion to their paid-up memberships.

* * *

A band in a small Minnesota town had just finished a vigorous but not overly harmonious selection. As they sank perspiring to their seats after bowing for the applause, the trombonist asked hoarsely:

"What's the next one?"

"'The Maiden's Prayer,'" answered the leader, consulting his program.

"Good Lord!" ejaculated the trombonist. "I just got through playing that!"

Test of a Man

The test of a man is the fight he makes,
The grit that he daily shows;
The way he stands on his feet and takes
Fate's numerous bumps and blows.
A coward can smile when there's naught to fear,
When nothing his progress bars,
But it takes a man to stand up and cheer
While some other fellow stars.

It isn't the victory, after all,
But the fight that a brother makes.
The man who, driven against the wall,
Still stands up erect and takes
The blows of fate with his head held high,
Bleeding and bruised and pale,
Is the man who'll win in the by-and-by,
For he isn't afraid to fail.

It's the bumps you get, and the jolts you get,
And the shocks that your courage stands,
The hours of sorrow and vain regret,
The prize that escapes your hands,
That test your mettle and prove your worth.
It isn't the blows you deal;
But the blows you take, on the good old earth,
That shows if your stuff is real.

* * *

A fellow wishing to catch a train and seeing no other conveyance to the depot, hailed a negro driving a big rawbone horse to a cart.

"Say, Uncle, can you get me to the train?"

"I do' know, sir, hit ain't long till train time and dis here ho'se is onnary slow."

"It's an army horse, aint it?"

"Yas, sir! Fit in the Injun war I spects."

"Will you let me drive him?"

"Help yo'self."

The man climbed in and taking the lines, said:

"Attention!" The horse stopped still and stuck his ears straight up.

"Charge!" At the command, the horse plunged ahead and in no time they were at the depot.

"Halt!" The beast stopped so suddenly that he almost tumbled the passengers out. The man tossed the negro a quarter and went into the waiting room. A few days later, another man came along and asked the negro to carry him to the depot.

"Yas, sir! I can get you there quicker'n a nartomobile!"

The man got in and the negro, catching up his lines, said:

"Attenshun." The horse acted as before.

"Charge!" Away they went to the depot, passed it and kept going at breakneck speed.

"Stop, and let me out, or I'll miss my train," exclaimed the angry man. "What do you mean, you rascal?"

"Boss, I 'clare to goodness, I done forgot the stop word."

* * *

The Infantry Trophy

The Chief of Infantry recently attended a meeting of the National Rifle Association, during the course of which the subject of an Infantry Match came up for discussion. It was decided that it would be desirable to have such a match included in the program of events for the annual national shoot and the association agreed to it.

The rules and regulations under which the match will be fired are now under consideration and will be published to the service as soon as finally approved by all agencies concerned.

In connection with this match the question of a suitable trophy and medals for the winning team came up, and General Farnsworth stated that the infantry would supply the trophy and the funds for procuring the medals.

The whole subject was presented to the Executive Council of the Infantry Association at a meeting on March 30, and after a full discussion it was decided that the funds should come from the infantry as a whole—in other words, it was desirable to have as many members of the infantry service participate as possible.

The cost of the trophy and the medals extending over a period of ten years will amount to something in the neighborhood of $1,500.

It is not desired that any officer contribute more than $1 or any soldier more than 10 to 15 cents to this fund, but it is desirable to have as many members of the infantry as possible contribute to it.

The INFANTRY JOURNAL has been charged with the task of collecting and accounting for the contributions, which will be acknowledged through the columns of the JOURNAL from month to month.

It is suggested that the matter be handled in each regiment and detached unit, the contributions being assembled and forwarded by the officer designated by the commanding officer for the purpose. Officers and soldiers not on duty with organizations should send their contributions direct to the INFANTRY JOURNAL. It is further suggested that where there is a group of infantry officers on duty at one point—for example Corps Area Headquarters, schools, etc., that one officer assemble the contributions and forward them.

This is another opportunity for the infantry to do something big and lasting for our branch of the service, and it should not be overlooked.

ACKNOWLEDGMENT OF CONTRIBUTIONS RECEIVED TO APRIL 20, 1922

Office Chief of Infantry $26.75

* * *

The brigade commander dropped in at the P. C. of one of his regiments. Neither the colonel nor the adjutant were in. He inquired of the orderly on duty:

"Who gets around first in the morning, the colonel or the adjutant?"

"Sometimes one and sometimes the other, Sir," replied the orderly.

"On what days is the colonel most likely to be here first?"

"I can't quite say, Sir. At first the colonel was always last, but later he began to be

earlier, till at last he was first. Until lately he came a bit earlier. Just now he is as much behind as he was earlier before, but I expect he will be earlier, sooner or later."

"Quite so, quite so," said the brigade commander, "that's all I wanted to know."

* * *

Indoor Rifle Team Match

The Editor:

The indoor rifle team of the Staunton Military Academy accepted the challenge of St. Johns School of Manlius, N. Y., and on the afternoon of January 28 defeated the New York School by the score of 890 to 879. Each team fired on its own range and exchanged results by telegraph. The teams and individual results were as follows:

S. M. A.		St. Johns	
Waltz	94	Carpenter	99
Yates	92	Eddy	89
Barbour	91	Schas	88
Kerwick	91	Gilmartin	87
Smith, A. P.	89	Van Aken	87
Austrain	88	Marsh	87
Dixon	87	Hearne	87
Reed	87	Schock	86
Ward	86	McClelland	86
Hann	85	Verbeck	83
Total	890	Total	879

A. M. Patch, Jr., R. A. B.,
Major, Infantry, U. S. A.

* * *

Wife—How many fish did you catch last Saturday, George?

Husband—Six, darling—all beauties.

"I thought so. That fish dealer has made a mistake again. He's charged us for eight."—*Stray Stories.*

* * *

Another Protest

The following resolutions were adopted by the Public Affairs Committee of the Union League Club of Chicago, April 4, 1922:

Whereas, a numerically considerable proportion of the members of the House of Representatives proposes to achieve reduction in the operating costs of the War and Navy Departments by disregarding the earnest recommendations of the heads of those Departments; and

Whereas, it is evident that the radical reductions planned and advocated have seriously affected the morale of the services and will, if ever made effective, result not only in a dangerously insufficient Army and Navy but will also gravely discourage the rebuilding of the National Guard and the upbuilding of the Reserve Corps; and

Whereas, peace has not yet come to dwell, even in this highly favored country; therefore, be it

Resolved, that the Union League Club of Chicago disapproves any and all efforts to assail the spirit and to unreasonably reduce the personnel of our armed forces; supports the principles and estimates presented by the Secretary of War, the Secretary of the Navy and the General of the Armies of the United States; and calls upon the Congress to refrain from sacrificing security upon the altar of dubious economy.

Resolved, further, that certified copies of these resolutions be forwarded to the President of the United States, the Vice-President of the United States, the Speaker of the House of Representatives, the Senators and Representatives from the State of Illinois, the Secretary of War, the Secretary of the Navy and the General of the Armies of the United States.

* * *

The Mother (to local doctor)—I think 'Enery 'ere 'as got the flu. Wot's it worth if I let's 'im go aht an' play with the other kids?—*Passing Show (London).*

* * *

Fort Washington Wins

The Fort Washington Basketball team under the leadership of Capt. Percy L. Sadler, 64th Infantry, has carried off the District of Washington Championship for the season of 1921-1922.

Many of the players on this team were members of the 7th Division team which won the 3d Corps Area Championship last year.

Record of Games

January 14,	Fort Washington	36
	Bolling Field	27
January 23,	Fort Washington	35
	Washington Barracks	27
February 2,	Fort Washington	23
	Fort Myer	37
February 4,	Fort Washington	37
	Walter Reed Hospital	23
February 11,	Fort Washington	36
	Washington Barracks	28
February 16,	Fort Washington	47
	Bolling Field	23
February 20,	Fort Washington	34
	Walter Reed Hospital	23
February 22,	Fort Washington	30
	Fort Myer	15

Captain Sadler was initiated into the mysteries of the game with the University of Alabama, playing later with the

FORT WASHINGTON BASKET BALL TEAM

Top row (reading from left to right): Priv. Donald Frazer, forward; Priv. Thurlow Miller, forward; Priv. Walter Ostrum, guard; Capt. K. J. Fielder, guard.
Bottom row: Lieut. H. E. Heineke, forward; Capt. P. L. Sadler, team captain and guard; Capt. T. S. Brand, center; Lieut. G. L. Gibney, guard. Tony Touart, mascot.

Y. M. C. A. at Mobile, Alabama, and was also guard on the 7th Division team of 1921 that won the championship of the 3d Corps Area.

Captain Brand played on the varsity squad of the University of Georgia from 1910-1914, attaining the coveted distinction of being named on the All-Southern team in 1913-1914. He was center and captain of the 1921 7th Division team.

Lieutenant Heineke was at Streator Township High School, 1912-13; scrub, season of 1913-14; varsity, 1914-15, 1915-16; captain, 1915-16. All Illinois Valley forward, 1915-16. Preparatory School, Marion Institute, Marion, Alabama, 1916-17. Captain plebe basketball team, U. S. M. A., 1917-18; scrub, 7th Division team, 1920-21; Fort Washington, 1921-22.

Lieutenant Gibney played guard on high school team from 1913 to 1915; Army and Navy Preparatory School, Washington, D. C., 1915-16; All-District Scholastic Guard; played on regimental team of the 15th Infantry, 1919-20.

Private Frazer played with the Thurman, Iowa, High School.

* * *

"Ah suttinly is glad to see yo' out of dat horspittle, Sam. What done happen to yo' in dar?"

"Ah done had mah bones X-rayed."

"An' Ah bets a five-spot dey was loaded." —*Pickup*.

* * *

The Military Order of the World War Acts

As an example of the reaction of the thinking men of the country to the subject of national defense, the action of the Military Order of the World War is illuminating.

In a telegram to Chapter Commanders under date of April 13, 1922, General Harries, Commander-in-Chief of the Order, conveyed instructions in part as follows:

> This is a call to duty. The congressional legislative situation with respect to Army and Navy appropriations demands prompt and intensive effort on the part of our membership, without which effort the National Defense Act will in a large sense be nullified and serious injury will be inflicted upon the three elements of the Army of the United States.
>
> Assemble your chapter with all possible rapidity and adopt resolutions in support of the estimates submitted to Congress by the Secretary of War and the Secretary of Navy. . . . Here is an opportunity for service and devotion such as we have not had for more than three years. Ask each companion to give at least one day of energy to this work. . . .

Then follow suggestions as to means for making the resolutions effective.

In response to these instructions, the Columbia Chapter, Military Order of the World War, located in Washington, on April 20, 1922, passed the following resolutions:

> Whereas, the National Defense Act as amended provides for the national defense and prescribes the organization of the Army of the United States as one of the chief agencies to that end, and
>
> Whereas, the military force created by this act is in keeping with sound democratic and economic principles in that it consists in great part of the National Guard and the Organized Reserves, with a Regular Army of minimum size, and
>
> Whereas, the effectiveness of both the National Guard and Organized Reserves in emergency is wholly dependent upon proper organization and training in time of peace, and
>
> Whereas, the House of Representa-

tives of the United States, in the Appropriation Bill for the support of the Army for the fiscal year 1923, has made inadequate provision for the organization and training of the National Guard and practically none for that of the Organized Reserves, and

Whereas, the House of Representatives has provided for a reduction in the strength of the Regular Army to an extent that must prejudice the development of the national defense system as a whole; therefore, be it

Resolved, as the sense of this meeting, that such action is prejudicial to the proper development of the Army of the United States and places in jeopardy the national defense; that the military program proposed to the Congress by the President of the United States is the minimum with which reasonable defense may be assured; that the members of this organization shall bring this matter to the attention of members of both Houses of the Congress; and that copies of these resolutions shall be sent to the various chapters of this order throughout the United States for indorsement and similar action.

* * *

It was in a court of law, and a witness was being cross-examined.

COUNSEL: Why do you assert that the plaintiff is insane?

WITNESS: Because he goes about declaring he is the Prophet Mohammed.

COUNSEL: And do you consider that clear proof of insanity?

WITNESS: I do.

COUNSEL: Why?

"Because," answered the witness, with a complacent smile, "I am the Prophet Mohammed myself."—*Edinburgh Scotsman.*

* * *

Colonel Fuqua Reviews "Three Soldiers"

Col. Stephen O. Fuqua's review of the Dos Passos book "Three Soldiers," which appeared recently in the *Chicago Tribune,* is a masterly effort animated by deep sense of justice to those who endured the hardships of the war, suffered broken health and maimed bodies and to those who made the supreme sacrifice. Colonel Fuqua writes to warn his countrymen of the bolshevistic, anarchistic doctrine running through the pages of the book, an affront to every decent principle upon which society is founded and organized business and government maintained.

The book is dissected and analyzed from cover to cover in such a way as to conclusively divulge its purpose—a vicious attack on the people and the Army of the United States—communistic propaganda of the deepest dye.

We quote below some of the passages from this great review:

The reflections on the honesty of the draft boards, that have been praised so generally and so generously throughout the country for their honesty and fairness, are flung into the reader's face through the medium of the character Applebaum, all of which gross unfairness is subscribed to by the hero, who admitted that he was a "sucker," too.

There are many impossible military scenes in this queer story, but probably the most unique and distorted one is that depicting the private soldier Stockton in getting up one morning, the crowd gathering around him, with men appealing to him to arise, the sergeant dramatically giving up the problem, and finally the red faced officer, "puffing and infurious," diagnosing the case as "rubbish and insubordination," directs "snappily" that "court-martial papers be drawn up at once and Stockton placed in the guardhouse," "by force if necessary."

The scene is well staged, for the door is slammed behind the "loot" to register "rage," and then the curtain drops with tear producing climax and the "chalk white faced boy" drops dead, in "his khaki spirit and whitish drawers."

Piffle! Piffle! Piffle! O, Mr. Author!

Did you expect real men and women to be moved by such nonsense?

The greatest insult offered to the American people connected with this story is in the camouflage of the publisher in offering it to the public. However, his sense of right must have unconsciously acted when he selected for his cover a distinctive yellow.

In all probability the greatest sales lie is the publisher's statement that the author, "with the ambition for truth telling, states the case for youths in rebellion against the established order," that it is founded on "acute observation," and that it is "authentic."

If America had such youths as estimated by the publisher on the suggestive yellow cover of this story in the claim that this is "a book that says exactly what the youths of America think of war and modern society," then the nation would die when these youths become of age; but, fortunately, this is not true, for the number of youths who have these thoughts are as few in our various communities as the number used by the author in the title of his book.

Then what is the object of this story, unless it be communistic propaganda? It is revolting to every element of fairness and justice in man's endeavor, it is founded on lies of the basest sort, cleverly woven into fiction, so that denial of fact may be complete and framed in story form, so that truth may be camouflaged.

At last the slacker, the deserter, the conscientious objector, the communist, the I. W. W., the weaklings, and the failures have a champion. The Liberator, the Crusader, the Toiler, the Nation, and kindred press have been furnished additional ammunition for firing their guns of attack against the Army and all organized society, business and government. Dos Passos has become the Knight Errant of all that America does not stand for.

Bergdoll, you are vindicated!

BOY—I want a dime to give to a lame man.
MOTHER—You shall have it. And who is the lame man, dear?
"Oh, he's the doorkeeper at the movies."—*Milestones.*

* * *

Second Division Reunion

Maj. Gen. John A. Lejeune, Commandant, U. S. Marine Corps, announces that the Annual Reunion of the Second Division Association will be held at Quantico, Virginia, on June 6, 7, and 8, 1922.

Brig. Gen. Smedley D. Butler, commanding at Quantico, will make all arrangements.

The Commandant of Marines says:

"The veterans of the Second Division who attend the Quantico Reunion will be looked out for at the post. They will receive quarters and meals there free of charge, and will have the opportunity to witness the drills and exercises at Quantico, and to enjoy the evening entertainments in the large gymnasium there. Of course, we would like to get some idea in advance as to the approximate number of men that will attend."

Railroads will make special rates. This is an excellent opportunity to visit the National Capitol as well as attend the Reunion of *your* Division, meet again your old buddies and be entertained by the famous Marine Brigade.

Notify the Association Headquarters that you are going to atend.

WM. W. BESSEL,
Adjutant General,
Secretary.

* * *

"Is that new hired man of yours a steady chap, Ham?"
"Yes," replied the farmer; "so far he has been practically motionless, in fact."

Camp Red Cloud

For many years the founders of Camp Red Cloud have been pioneers in the movement towards securing healthful and vigorous summer conditions under which the boys and girls who attend their camp can be taught the necessity for simple life and the principles of upright living and loyal patriotism so necessary to the making of good American citizens.

Physical growth, the discipline of our bodies, has always been of prime importance. Now as we enter an era of ever greater competition and endeavor we must take pains to see that our children spend their early years under influences which will direct their energy towards worthwhile things.

Last summer General Pershing's son attended Camp Red Cloud and the general himself spent a week at the camp. General Pershing said of the camp:

After seeing the improvement in my own boy as a result of his summer at such a camp, and as a consequence of my own delightful stay at Camp Red Cloud, I have become an enthusiastic advocate of this method of training for boys.

A properly conducted summer camp does many things beside improving the physique of a young boy. It familiarizes him with outdoor life, and gives him an appreciation of many phases of nature. It develops his character and makes him self-reliant. For the spoiled boy there is no better place.

Camp Red Cloud, offering everything possible in the way of councilors, equipment and location, is managed by a group of men whose aim is to be of service in inculcating those virtues so necessary for the future of our country.

The girls' camp—Camp Red Wing—under the same directors, offers to girls all types of activities and is supervised by a most capable and efficient group of councilors.

Those interested in the camps may procure further details by writing to Major Louis E. Lamborn, Infantry Reserve Corps, Friends School, Baltimore, Md.

Scientific Baseball

Baseball is really governed by mathematics. It is a highly scientific pursuit. Those who understand it best are even now learning a great deal about it which they did not know before by a systematic study of pictures taken with the so-called "slow-motion" camera.

This sort of camera takes photographs at tremendous speed, 120 of them a second, whereas the ordinary movie camera makes only sixteen to a second. When the film is run through the machine at the ordinary rate, the movements of the players on the screen appear absurdly slow and deliberate, so that the time required for each action can be exactly determined.

Editorial

Foundations of Sand

In 1920, with the lessons of the World War in mind, and particularly of the part we played therein, Congress set about providing measures for preventing a repetition of our experience. The result was the passage of the amended National Defense Act, a measure that authorized, for the first time in our history, an adequate system for national defense.

The provisions of this measure were well considered, economical and wholly in keeping with our form of government, since they provided for a sufficient military force composed in great part of non-professional soldiers to whom the opportunity for organizing and training in time of peace was to be afforded. A regular, or professional, component of this force, sufficient for our peacetime needs and for the task of organizing and training the citizen components, was authorized.

Work was at once begun on building up this force, and it is to the credit of our manhood and their spirit that, though they were busy in the effort to reconstruct their fortunes and were for the most part fed up with war and all that pertains thereto, nevertheless they responded to the call and entered upon the new project with surprising energy and enthusiasm and in surprising numbers. And it should be borne in mind all of the time that there has been practically no inducement offered them—that their action has been dictated purely by a sense of duty.

In the short space of two years the nucleus of a great military force has come into being and is rapidly assuming both actual and potential effectiveness. Under the leadership of World War veterans, the National Guard is taking a new and more effective place in the scheme of national defense. Under similar leadership, the Organized Reserve is rapidly developing the machinery for effectively handling and leading the great untrained element of our manhood in emergency. And all of this on a purely voluntary basis.

Naturally all of this cannot be done without assistance. These men are busy men, and they can give only a little of their time to the work. Somebody must fill in the gaps for them, and Congress has definitely charged the Regular Army with this task.

Thus far, Congress has done its part. It has authorized the creation of a great military force and has assigned tasks to each of its components. It now remains for it to give substance to its plans by providing the means whereby they may materialize.

This it is not doing. Under the urge of economy, it is limiting appropriations for the support of the military establishment in a degree that threatens the integrity not only of the Regular Army but of the whole fabric of the Army of the United States.

Under the appropriations it is proposed to limit the Regular Army to a mere handful, insufficient for proper organization, inadequate for the smallest emergency, and incapable of lending the necessary assistance to the National Guard and Organized Reserves in their own upbuilding.

The proposed appropriations for the National Guard will operate to practically bring its development to a standstill and curtail the training of the units already organized, while those for the Organized Reserves limit that body to a paper organization without a chance of making itself otherwise.

In a word, progress in the development of national defense is not only brought to a standstill but is set back to where it was in pre-war days.

Nor is this all. Under the same urge, Congress is seeking to limit our force on the sea to the approximate proportions of 1898. At the same time, awakening to its needs for markets, the country is going abroad in search of them and, as a means to establishing such markets on a basis of commercial security, is endeavoring to build up a merchant marine—without a navy to give it standing or place among other countries of the world.

Altogether we are giving the world a modernized version of the man who built upon the sands. We may be spared the storm. Let us hope for our sakes that we shall be. But we are inviting it and, when it comes, let us be prepared to take the consequences. Let us not harbor any sense of false security. Let us face the future with our eyes opened to what it may hold for us.

¶

General Wood's Report

The report of General Wood on the conditions that he found in the Philippine Islands is one of the most convincing documents of our time.

Based upon facts as he found them, after honest, intelligent and painstaking investigation and study, it is a statesman-like production.

The conclusions reached are here published for the benefit of our readers who may not have had an opportunity to read the document.

We find the people happy, peaceful, and in the main prosperous and keenly appreciative of the benefits of American rule.

We find everywhere among the Christian Filipinos the desire for independence, generally under the protection of the United States. The non-Christians and Americans are for continuance of American control.

We find a general failure to appreciate the fact that independence under the protection of another nation is not true independence.

We find that the government is not reasonably free from those underlying causes which result in the destruction of government.

We find that a reasonable proportion of officials and employees are men of good character and ability, and reasonably faithful to the trust imposed upon them; but that the efficiency of the public services has fallen off, and that they are now relatively inefficient, due to lack of inspection and to the too rapid transfer of control to officials who have not had the necessary time for proper training.

We find that many Filipinos have shown marked capacity for government service and that the young generation is full of promise; that the civil service laws have in the main been honestly administered, but there is a marked deterioration due to the injection of politics.

We find there is a disquieting lack of confidence in the administration of justice, to an extent which constitutes a menace to the stability of the government.

We find that the people are not organized economically nor from the standpoint of national defense to maintain an independent government.

We feel that, with all their many excellent qualities, the experience of the past eight years, during which they have had practical autonomy, has not been

such as to justify the people of the United States relinquishing supervision of the government of the Philippine Islands, withdrawing their Army and Navy, and leaving the islands a prey to any powerful nation coveting their rich soil and potential commercial advantages.

America has a duty to the Filipinos that may be discharged only by a continuance of our policy of education, justice, and training in the art of government. To cast the islands adrift on the sea of independence would be to place them at the mercy of any powerful nation that might covet them.

Life Insurance the Stabilizer

One of the greatest deterrents to the spread of Bolshevism in this country is the fact that the funds of forty million of our citizens are more or less tied up in the life insurance institutions of the country.

And the number is increasing all the time. Last year some thirteen million new policies were issued.

The man who has made ten to twelve payments on a twenty-year payment policy does not want to see his savings and his provisions for the future of his dependents wiped out of existence by a wave of radicalism and, what is more to the point, he does not intend that it shall be done.

The more life insurance policies that can be spread over the land the safer the country is from the machinations of the radicals who would have nothing to lose through the adoption of their theories of government.

Fire Prevention

The half-billion-dollar annual fire bill that this nation pays calls for something more in the nature of fire prevention than has heretofore been produced.

The man who has a destructive fire is generally regarded as the victim of misfortune, whereas he should in the majority of cases be regarded as careless or even criminal, according to how he has neglected to employ the known preventatives available.

In the first place, the builder has ready access to the advice of experts as to the materials that should be used in construction work which tend to reduce fire hazards. This service is supplied by the fire insurance companies through the medium of the Underwriter's Laboratories, a non-profit institution that conducts a scientific research bureau and an establishment for the testing of all kinds of fire-prevention devices. The results of this investigation, with the stamp of approval placed on manufactured articles and equipment, is published broadcast from time to time.

In the next place, every fire, however small and insignificant, should be thoroughly investigated with a view to placing the responsibility therefor on the shoulders of someone, and that person should be prosecuted to the extent of the law for criminal neglect if there be such involved in the case. Municipalities could learn much from the Army in this latter respect, for we all know what it means to have a fire and the endless investigations and explanations incident to it.

When one examines some of the flimsy structures that are now being erected throughout the land and denominated "homes," he is impressed with the fact that we are not profiting by experience. We are not taking advantage of the information readily at hand for the prevention of fires in the future. We should begin at the foundation, and every builder should be required to produce in his plans conclusive evidence

that he is taking the precautions necessary for the preservation of his own property and that of his neighbors. And the matter should not rest here. It will require the services of efficient and conscientious inspectors to watch every step to see that the whole plans are carried out to the letter.

The Advice of Experts

The wise man who runs afoul of the law goes to a lawyer for legal advice. When he falls ill he calls in a doctor man and follows his instructions. When his motor goes bad he takes it to a garage where there's an expert to repair it. When he plans his home the architect tells him how to go about it.

No matter what his problem may be, if it is outside the line of his own calling, he looks to the expert for a solution to it—the specialist who has made that particular subject his life work.

In their personal affairs members of Congress do as other men do—seek and accept the advice of experts. When it comes to the solution of national problems and providing legislation for their solution they have at their beck and call the specialist talent of the nation—as a rule they take advantage of it, and, we may say, as a rule, accept it.

The glaring exception is with respect to army legislation. Advice is sought and willingly given, but it is not accepted.

The Government has educated and trained the officers at the head of the Army. They are the military experts of the nation. In their recommendations and advice on military legislation they have only the welfare of the nation at heart. They know what the nation needs in a military way, and their knowledge is based on years of practical experience and close and careful study of the problem. They know what unpreparedness has cost in lives and treasure and realize what it may cost in the future.

In the present situation there have been repeated warnings of the dangers that lurk in the military program that has been adopted by the House. Made under the guise of economy, if it is carried into effect, it will eventually prove to be the rankest extravagance. Reducing the Army to the proposed number of 115,000 means the abolishment of many units that are required for carrying out effectively the mission of the Army of the United States. The 11,000 officers provided for are not nearly sufficient to carry on the projects with which the War Department is charged by Congress, and many of them will have to be curtailed or even given up. The cutting of the appropriation for Reserve Officer Training to $250,000 simply means that another summer will go by without training for our reserve officers. It is now three or four years since these officers were in active service, and they are getting to the point where they need a refresher course of training. The necessary funds for the modest and entirely practical and necessary program of the War Department should be forthcoming.

It must be and is realized that there is no "big army" sentiment in the country. On the other hand, it is a well-known fact that the people do not want the provisions for national defense reduced to a mere fiction. They want, and are willing to pay for, a reasonable military establishment

founded on correct principles and effectively employed. They realize and apppreciate the terrible consequences involved in sending untrained men under untrained officers into battle, and they are not willing in the name of economy or any other name to have the experiences of the past repeated.

Hard Times for the Bucket Shops

During the slump in the stock market of 1920 and 1921 the bucket-shops prospered and waxed rich. For it is under such conditions that they thrive.

Now that the market is on the upgrade and has been going in that direction for several months past, we see them going to the wall by the scores. Every paper contains news items of failures throughout the country.

All of this is but natural when one considers the system on which the bucket-shops operate, for they do not actually buy the stock for their patrons. In a declining market they can usually get many of their clients so extended in their market commitments that any good reaction over the board will enable them to close out accounts for lack of additional margin. If the bucket-shop has never really bought the securities, it gets all the money that has been put up on them.

The partial-payment-plan shops work the game along the same general lines, for they do not have to deliver the securities for some twenty months in the future and during that period can usually buy at a lower figure than the customer has contracted to pay for them.

Another Sea-sickness Cure

The cables from Paris flash the news that a cure for seasickness has been discovered. "Interesting, if true," as our friend Mutt would say.

The unsuspecting traveling public has had so many panaceas and remedies for the "mal de mer" fostered upon it that one cannot avoid being skeptical about this latest discovery.

We, of the Army, have had more experience with sea-sickness than the average landlubber class, and we have tried out every remedy and preventive proposed only to find them all unavailing. One simply has to wear it off and get his sea legs before he can overcome the dread malady.

Reserve Officers' Department

Summer Training

There is every reason to believe that the Senate will restore the item of $4,000,000 in the Army Appropriation Bill for the training of reserve officers this coming summer and that the War Department program will be carried out as planned. The House cut the item from the Appropriation Bill, but it is common talk that it was done for the purpose of trading when the bill finally gets to conference.

In every instance where the matter has been given due consideration there has been a demand for the training program, and from the number of letters that have been received on the subject by members of both Houses of Congress it is estimated that there will be a decided change of heart before the Appropriation Bill becomes a law.

¶

Tables of Organization

I would like to get hold of a book, if there is one published, giving the details of Army Organization. I should like to have it show the component parts of a division, giving the numbers in each unit, with descriptive matter of organization throughout.—E. K. W.

Answer: There is no such book in print, and one cannot come out until the reorganization of the Army has been decided upon by Congress and the Tables of Organization prepared. Under the Act of June 4, 1920, Congress provided for an Army of 280,000 men. Tables of Organization were prepared on that basis. In 1921 Congress reduced the strength to 150,000 men, and the tables, which had hardly been completed, had to be changed to meet this cut. We are now faced with a further reduction which will necessitate another set of tables. It is of little use to publish these tables with explanations, etc., until we get down to bedrock and it is finally determined just what the army organization is to be. As soon as that is done the Infantry Association will take up the project of providing a complete set of tables of organization in book form. The war-strength tables have not yet been completed, and it is probable that they will require much revision before they can finally be adopted. This is an enormous undertaking—one that cannot be accomplished in a month or in a year. Over 700 tables are involved in it. When the matter is finally sifted down a way will be found to make these tables available to interested officers at a reasonable price.

¶

Reserve Corps Eligibility

I am eligible for a commission in the Reserve Corps. Would you advise me to apply for it now?—D. W. McK.

Answer: There are today a lot of eligibles for the Reserve Corps who assume the attitude—"Well, I would join the Reserve Corps if it amounted to anything, I'll just wait and see what it does." And we may remark in passing that this is the bunch that is going to be left at the scratch when the bell rings and the race is on.

The Reserve Corps is growing today by leaps and bounds. Thousands of officers are accepting assignments to units of the Organized Reserves, and the work of organization is proceeding at a rapid pace. The men who get in now and secure an assignment to a definite unit are the men that will have the opportunities for advancement when the time comes. Those who hold themselves aloof will find all the places filled, and they will have to take what is left or none at all.

By all means get in your application for a commission to the Adjutant General of the Army, and then, when you get it, ask for an assignment to a unit. Every day you lose now will be a regret later on.

¶

Subjects Included in Examination for Promotion

What subjects are included in the professional examination of an officer of infantry for promotion?—A. C. H.

Answer: The professional examination for promotion is divided into two parts, Part A consists of five basic subjects which officers of all grades and branches of the service are required to undergo for service with

troops. These subjects are Administration; Military Law; Military Courtesy and Customs of the Service; Field Service Regulations; Military Hygiene. Officers being examined for "Special Service" are required to be examined in Administration; Customs of the Service, Courtesy and Military Discipline; Military Hygiene. All these subjects are included in "Reserve Officers Examiner" in question and answer form, which makes them readily available without undue expenditure of time and effort.

The subjects included in Part B of the examination will be found on page 66 of Special Regulations No. 43. They are as follows:

Subject	General scope
(1) Automatic rifle, grenades (hand and rifle), 3-inch mortars, 37-mm. gun, machine guns, and tanks.	Nomenclature, care, and use of one weapon of this group to be selected by the officer being examined.
(2) Bayonet combat	General knowledge.
(3) Rifles, pistols, and equipment.	Nomenclature, care, and use.
(4) Infantry Drill Regulations.	Knowledge necessary to command at drill or in the field any unit or detachment appropriate to the grade for which examined.
(5) Field fortifications	Organization of ground.
(6) Interior guard duty.	General knowledge
(7) Minor tactics	Map problems, tactical walks, or terrain exercises involving a unit appropriate to the grade for which examined.
(8) Musketry	Principles of combat firing.
(9) Rifle marksmanship.	Principles of individual training and practice.
(10) Topography	Map reading; route sketch of not less than 2 miles or position sketch of one-fourth square mile.

TABLE SHOWING SUBJECTS IN WHICH OFFICERS WILL BE EXAMINED

Grade	Subjects. (Numbers refer to above list.)
Promotion to first lieutenant	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Promotion to captain	4, 6, 7, 8, 9, 10
Promotion to major	4, 5, 6, 7, 8
Promotion to lieutenant colonel	5, 7
Promotion to colonel	4, 7

You will find on pages 254 to 257 a bibliography which shows in detail suitable textbooks covering these subjects.

Important Decision

There has been some question as to whether or not an officer of the Reserve Corps, who is a government employee and receiving in excess of $2,000 per annum, could also receive pay during the period when he is called to active duty for his fifteen-days training.

The situation has been cleared up by the recent decision of the Comptroller General of the United States as follows:

By indorsement dated March 8, 1922, on a letter addressed to you by the Treasurer of the United States, decision is requested whether section 6 of the act of May 10, 1916, as amended by the act of August 29, 1916, 39 Stat., 582, is applicable to officers and employees in the civil service of the United States when ordered to duty with troops or at field exercises as members of the Officers' Reserve Corps.

Section 6 of the act of May 10, 1916, as amended, reads: "That unless otherwise specially authorized by law, no money appropriated by this or any other act shall be available for payment to any person receiving more than one salary when the combined amount of said salaries exceeds the sum of $2,000 per annum, but this shall not apply to retired officers or enlisted men of the Army, Navy, Marine Corps, or Coast Guard, or to officers and enlisted men of the Organized Militia and Naval Militia in the several states, territories, and the District of Columbia. . . ."

It is noted that this law specifically excepts from its operation retired officers of the Army, Navy, Marine Corps and Coast Guard and officers of the Organized Militia and Naval Militia, but it makes no such exception with reference to the members of the Officers' Reserve Corps. However, the Act of May 12, 1917, 40 Stat., 72, contains a provision which reads:

"That all officers and employees of the United States or of the District of Columbia who shall be members of the Officers' Reserve Corps shall be entitled to leave of absence from their respective duties, without loss of pay, time or efficiency rating, on all days during which they shall be ordered to duty with troops or at field exercises, or for instruction, for periods not to exceed fifteen days in any one calendar year."

Without reference to the facts of any particular case the former Comptroller of the Treasury in a decision dated May 26, 1917, 23 Comp. Dec., 676, made the statement that the provision just quoted "does not repeal generally, nor with specific reference to the Reserve Corps, the provisions of the Act of May 10, 1916, as amended August 29, 1916, 39 Stat., 120, 582, if these provisions are otherwise applicable."

The service for which members of the Officers' Reserve Corps are entitled to leave of absence under the provision in the Act of May 12, 1917, hereinbefore quoted, is that

provided for in section 39 of the Act of June 3, 1916, 39 Stat., 191 (see 24 Comp. Dec., 82 and 158). Said section 39 provides:

"*Instruction of Officers of the Officers' Reserve Corps.*—To the extent provided for from time to time by appropriations for this specific purpose, the Secretary of War is authorized to order reserve officers to duty with troops or at field exercises, or for instruction, for periods not to exceed fifteen days in any one calendar year, and while so serving such officers shall receive the pay and allowances of their respective grades in the Regular Army: . . . "

This provision contemplates only brief periods of service for purposes of instruction or training necessitating only temporary absence from the officer's regular vocation in civil life. The pay specifically provided for such brief periods was no doubt intended merely to make membership in the Officers' Reserve Corps more attractive and to induce civilians to accept commissions in and spend a part of their annual vacations from their permanent occupations with the Officers' Reserve Corps. That the acceptance of commissions in the Officers' Reserve Corps by officers and employees in the civil service of the United States was contemplated and sanctioned by Congress is clearly indicated by the provision in the Act of May 12, 1917, hereinbefore quoted, and by other provisions of law. And it is expressly provided that the absence of such officers and employees on account of the annual instruction or training service prescribed by law for members of the Officers' Reserve Corps shall be "without loss of pay, time or efficiency rating." Therefore, there would appear to be no doubt that such an officer or employee, regardless of his rate of compensation as such, is entitled to receive the full amount thereof while undergoing instruction or training ordered under the provisions of section 39 of the Act of June 3, 1916. And since said section provides that members of the Officers' Reserve Corps while performing the duty contemplated thereunder "shall receive the pay and allowances of their respective grades in the Regular Army" without making any exception in the case of reserve officers who are also officers or employees in the civil service, I think it can and must be held that the payment of double compensation in such cases is "otherwise specifically authorized by law" within the meaning of that term as used in section 6 of the Act of May 10, 1916, as amended, and that therefore the provisions of said section do not prohibit an officer or employee in the civil service of the United States from receiving for the same period the salary of his office or position, regardless of the rate thereof, and the pay and allowances of his grade as an officer of the Officers' Reserve Corps while performing service ordered under the provisions of section 39 of the act of June 3, 1916. The question submitted is answered accordingly.

¶

Endorses "Reserve Officers Examiner"

Brig. Gen. L. R. Gignilliat, Officers' Reserve Corps, Commandant of Culver Military Academy, has given "Reserve Officers Examiner" a thorough going over and has placed his stamp of approval on the book in the following:

I find "Reserve Officers Examiner" to be an excellent book for reserve officers with which to refresh themselves on the subjects contained therein. The form in which the subjects are presented permits one to grasp the subject matter more readily and brings out clearly the more important points. The book should be of great help to those who have applied for examination for appointment and those who have been designated for promotion in the Organized Reserves.

L. R. GIGNILLIAT,
Brigadier General,
Officers' Reserve Corps, U. S. A.

¶

What You Can Do

I note that the House has cut the item for the training of Reserve Officers to a bare $250,000. What can reserve officers do to help get the original amount put back in the Army Appropriation Bill?—J. D. H.

Answer: The War Department estimate of over $4,000,000 for the training of Reserve Officers was cut to $250,000 by the House of Representatives. The original amount was approved by the Bureau of the Budget and the President. This matter has been the subject of extended hearings before the Senate Military Committee and it is expected that the original item will be restored when the bill is reported to the Senate. After passage it will go to conference and there be threshed out and the amount determined upon by the conferees.

Reserve officers can do much to help out the situation by writing letters to their members of Congress pointing out the necessity for the training of Reserve Officers this summer and urging them to support the War Department project for the summer training.

Refresher Course in Map Reading

The first instalment of this course covering the subject of scales is contained in the April number of the INFANTRY JOURNAL. This is the second instalment covering the subject of map direction and the location of points by coordinates. This course is based on Map Reading[1] as a textbook.

1. How is the north direction of a map indicated?

2. When a map has no indication as to which is the north, how would you determine it?

3. How are map directions stated in map reading?

4. What do you understand by orienting a map?

5. Why is it necessary to orient a map?

6. Describe the process of orienting a map.

7. Referring to the P-11 sheet of the Emmitsburg Quadrangle (*Note.*—Cut out and use the protractor that is supplied with Map Reading):

a. You are at the Clagett Farmhouse. What is the direction of the following points: Road fork 428; road fork 395; road fork 383; the barn at A; road fork 443; road fork 427?

b. What is the direction of (*b*) from (*a*)?

c. A patrol starts out from the barn at A. It proceeds to hill 462; thence to 443; thence to 427; thence to Clagett; thence to hill 462; thence to the barn at A. You are called upon to make a report of the route. Describe the route taken by the patrol.

d. Let us say the line (*a*)—(*b*) is magnetic north and south—(*a*) north. What is the compass bearing of the following points from road fork 443: Road fork 395; the barn at A; the Clagett Farmhouse?

e. The side borders of the map run magnetic north and south. A scout starts out from road fork 428 and marches at the rate of 80 yards per minute. He proceeds as follows: 215° for 8 minutes; 130° for 7 minutes; 100° for a distance of 450 yards; 170° for 6 minutes, and 70° for 7 minutes. Locate the position of the scout on the map. What is the compass bearing back to the point of starting?

f. The line (*d*)—(*e*) is assumed to be magnetic north and south—(*e*) north. Two scouts start from the farmhouse at A. Scout X marches on a compass bearing of 280° for a distance of 1,150 yards; scout Y marches on a compass bearing of 230° for a distance of 1,400 yards. What is the compass bearing of scout X from scout Y? How far apart are they?

g. The line (*f*)—(*g*) is true north and south—(*g*) north. The declination is 7° west. A scout is at road fork 383 and decides to march directly on road fork 443. What is the compass bearing he must march on?

h. The side borders of the map are magnetic north and south. A scout is at the southeast edge of the woods on hill 462, takes a compass bearing on an enemy outguard which reads 10°; he works his way under cover to the Clagett barn, where he takes another bearing on the outguard which reads 45°. Locate the outguard.

i. You are on the railroad in the cut east of Clagett. It is necessary to orient your map. How would you go about it?

k. You are at a point in the woods north of hill 462. You have a box compass with you. How would you orient your map?

l. You are out in the open fields east of hill 462. You have a box compass. You want to locate your position on the map. How would you go about it?

m. You are scouting along the ridge running north from A. You have located an enemy machine gun on hill 462. You want to plot the exact location on the map. How would you go about it?

8. Referring to the Emmitsburg Quadrangle:

a. What is the direction of Fairplay from the cross roads at Emmitsburg?

b. Describe the Motters—446—478—Longs road by direction and distances?

c. What is the direction of hill 361 from Thomas Creek Church?

LOCATION BY COORDINATES

9. Referring to the Emmitsburg Quadrangle:

[1]See advertisement in this number of the INFANTRY JOURNAL.

a. Give the coordinates of the following points: The cross road at Thomas Creek Church; the Clagett Farmhouse; the bridge over the Monocacy River at the Stull farm; the cross roads at Fairplay.

b. An enemy battery is located at 344.6—732.6; locate it on the map. A machine-gun nest has been discovered at 342.4—729.7; locate it on the map.

c. An enemy line runs as follows: 342.8—732.2; 342.1—731.5; 341.7—731.1; 341.2—730.6; 340.9—730.4. Locate this line on the map.

d. An aviator reports an enemy battery going into position at 342.2—729.9. You have a machine-gun company in position at 343.2—729.3. What do you do?

e. The line of resistance of your outpost runs along the high ground, hill 466—hill 464—road fork 449—Thomas Creek Church—cross roads 420. Describe this line by coordinates.

f. What is the coordinate of the town square at Emmitsburg? The Cose farmhouse? Cump's mill? Rose Hill Farm? Martin's Mill?

① TERRAIN EXERCISE NO. 2

Posting an Outpost

THE PROBLEM

General Situation:

The (*a*) forms the boundary between hostile states. A Blue force is concentrating at (*b*). Red troops have been reported in the direction of (*c*).

Special Situation, Blue:

A Blue detachment consisting of one regiment of infantry has been sent out towards the border as a covering force. It is disposed as follows:

The regiment (less 2d and 3d Battalions) on the (*d*) road; 2d Battalion on the (*e*) road; 3d Battalion on the (*f*) road.

The 2d Battalion marching on the (*e*) road, with Company E as advance guard, has reached (*g*), where the battalion commander decides to halt for the night. It is now 3 o'clock p. m. The column has halted, and the company commanders have assembled at this point.

The battalion commander issues verbal orders as follows:

> Small detachments of the enemy have been reported at (*h*) and (*i*). Our 3d Battalion is halted for the night at (*k*); our regiment (less 2d and 3d Battalions) is halted for the night at (*l*).
>
> This battalion halts for the night at (*m*). March conditions cease.
>
> The advance guard will furnish the outpost along the line (*n*).
>
> The remainder of the battalion will bivouac, Company F at (*o*); Company G at (*o*); Company H at (*o*); headquarters company at (*o*). In case of attack the outpost will be supported.
>
> The field trains will join the troops.
>
> Messages to (*p*).

(Note: Company E is organized in accordance with T. O. 28-W. See page 847, Infantry Journal for March, 1922.)

Explanation of Symbols

(*a*) In designating the boundary line, some natural topographical or geographical feature should be selected, such as a river, creek, canal, crest of a ridge, etc. In this problem it may be assumed that the halt of the battalion for the night is made just within the boundary or across the boundary in enemy territory. The choice will depend upon the location of suitable ground for the outpost with a view to bringing out the illustrations involved in the posting of the outpost.

(*b*) A point within friendly territory. Should be a march or two from the boundary.

(*c*) A point within enemy territory. Should be a march or two from the boundary.

(*d*), (*e*), (*f*). Detachments are sent out to cover the concentration of troops when the concentration is made at a point where there is danger that the enemy may attempt to interfere with it. Such detachments proceed towards the border on the main routes by which the enemy must advance. (*d*) would be the next main road to the left of the road (*e*) on which the 2d Battalion is advancing; (*f*) would be the next main road to the right of the road on which the 2d Battalion is advancing. This places the 2d Battalion in the center of the formation.

(*g*) A point in the vicinity of the place where the terrain exercise is to be conducted.

(*h*) and (*i*) The places where the enemy troops are reported to be. They should be several miles away from (*g*), where the battalion is to halt for the night.

(*k*) The place where the 3d Battalion halts for the night.

(*l*) The place where the regiment (less 2d and 3d Battalions) halts for the night. The three places where the battalions halt should form a general line covering the place where the blue forces are concentrating.

(*m*) The place where our battalion bivouacs for the night.

(*n*) Indicate the general line that the outpost is to occupy. If it is impossible to do this it may be stated as follows: "Covering the approaches from the (*south, north, etc.*)."

(*o*) Designates the locality where each of the companies of the battalion is to bivouac for the night. The companies should be separated and there should be cover from aerial observation if practicable.

(*p*) The headquarters of the battalion.

THE PROBLEM

Situation No. 1:

You, Captain E, are in command of Company E, which is now the advance guard, and has been designated to form the outpost for the night. Your company is in advance guard formation on the road.

Required:

The action you, Captain E, take, and the orders you issue.

PROCEDURE

The members of the class are assembled at (*m*) (see explanation of symbols), where the battalion is to halt for the night.

The Director: Before taking up the problem for solution I want to make a few remarks on the subject of the protection of a body of troops while in bivouac, and to review briefly the duties and formation of an outpost.

EXPLANATION

The Director: As a command on the march protects itself from surprise by covering detachments called advance guards, flank guards and rear guards, so also does a command at a halt protect itself by a system of covering detachments denominated outposts.

Duties.—Like advance guards on the march the outpost is charged with the duties of observation and resistance:

Specifically these duties are:

1. To protect the main body so that the troops may rest undisturbed.

2. In case of attack, to check the advance of the enemy long enough to enable the main body to make dispositions to meet him.

3. To reconnoiter the enemy, prevent his reconnaissance and give timely warning of the approach of hostile bodies.

Subdivisions.—The outpost is divided into two general lines. The first, which is called the "line of observation," does the watching for the enemy and prevents his small bodies from getting any information about our troops or annoying them. The second is a "fighting line," which holds off larger bodies.

These lines must cover the front and flanks of the troops at rest. The "watching line" must be so located that the watchers out in front will be able to see the enemy before he gets close enough to do damage. The "fighting line" must be so located that it will have what we call a "good field of fire," that is, the ground in front must not be such that it will hide the movements of the enemy and allow him to get within effective rifle range without coming under our fire.

Formation.—The formation of an outpost may best be described by referring to an outstretched hand.

Hold your left hand in front of you with the thumb and fingers extended and pointing to the front, palm of hand down.

The wrist will be the location of the troops in camp or in bivouac.

The knuckle joint of the second finger will be the location of the reserve of the outpost. This is the body of troops that is held out of the fight until the direction of the enemy's main attack is developed, when it is thrown in to meet it, or to make what we call a "counter-attack." In very small outposts this reserve is usually omitted.

The second joints of the fingers and thumb will mark the positions occupied by the "supports." These are the fighting troops and they occupy the fighting line of the outpost. From these supports, small detachments, which we call "outguards," are sent to the front.

The first joints of the fingers and thumb will mark the positions of the outguards. These are classified as pickets, sentry squads and cossack posts. A picket consists of two or more squads and is posted so as to cover the most important route by which the enemy may come. The sentry squad consists of one

rifle squad. The cossack post is composed of a noncommissioned officer and three men.

The tips of the fingers and thumb will mark the line of the sentinels. These are the ears and eyes of the outpost system.

The sentinels are sent out to the front from the outguards. A picket posts one double sentinel post for each of its squads. Each sentry squad is charged with maintaining one double sentinel post. The cossack post maintains a single sentinel who is posted nearby.

Are there any questions?

PROCEDURE

The Director will endeavor to answer any questions that may be asked by the members of the class. After all questions have been cleared up, the Director will hand a copy of the problem to each member of the class and a few minutes are allowed for them to read it and get oriented.

The Director: Please give me your attention while we go over the problem.

The Director reads the problem aloud, each member of the class following from the copy in his possession. The direction of places mentioned are pointed out.

The Director: Lieutenant Hunt, give a brief statement of the tactical situation as you understand it.

Lieutenant Hunt states his understanding of the tactical situation. As he proceeds, the Director makes such explanations as may be desirable. One or more additional members of the class may be called upon to state their version of the situation. All of this is for the purpose of fixing the elements of the problem in the minds of the members of the class and prevent any subsequent misunderstanding of them.

The Director: Lieutenant Barry, what do you estimate the mission of our battalion to be?

Lieutenant Barry: We are an element of the force sent out to cover the concentration of the Blue forces and preventing the enemy from interfering with it.

The Director: We have not yet gained contact with the enemy. Why do we halt at this time?

Lieutenant Barry: There may be one or more reasons for it. In the first place, we are a detachment of a larger force (our regiment), and it is probable that before we started out, instructions were given our battalion commander to halt in this locality, so as to be on the general line of all the covering troops.

The Director: That is correct. Our battalion must conform to the general plan of the operation.

Before going further let us consider the process by which our battalion commander arrived at his decision to halt and make the disposition indicated in his order. He has sized up the situation with respect to his mission, the enemy, our own troops, considered the plans of action open to him and the enemy, and the terrain. Based on all of this he decides to halt for the night with the advance guard as the outpost and the other companies bivouacking as indicated in the order. Now let us see how well his order conforms to the form laid down in Field Service Regulations. Captain Hall, what are the elements of an order as applied to the halt of a command on the march?

Captain Hall: The first part contains information of the enemy and our own troops. The next is the plan of the commander in general terms. In this case it is merely to halt for the night with the added sentence to the effect that march conditions cease. Next comes the tactical disposition, in which each element of the command is given orders as to just what it is to do. The last section of this paragraph tells what action is to be taken in case the enemy should make an attack. Then comes the disposition of the trains or administrative arrangements, and finally the location of the battalion P. C. is indicated by telling where messages are to be sent. All of this is included in the order, and I should say that every essential point has been covered satisfactorily.

The Director: Lieutenant Baker, why is Company E detailed to furnish the outpost?

Lieutenant Baker: It is the general rule that troops are detailed on covering duty for a period of twenty-four hours. Company E has been our advance guard for today's march. If the battalion continues the march again tomorrow morning, another rifle company will be detailed to form the advance guard. It will get into advance guard formation before it reaches Company E's outpost line, and when the advance guard

support crosses the line of outpost supports it assumes responsibility for the protection of the column, and the outpost troops are withdrawn and take their proper place in the column. Then, too, the advance guard is in the best position to continue the protection of the battalion. It has merely to change its formation from an advance guard to that of an outpost, which involves the least marching on the part of the troops.

The Director: We will now go forward to the point where the support of the advance guard is halted on the road. How far would that be, Captain James?

Captain James: I should say that the support should be about 500 yards in advance of the main body of the battalion.

The class is now conducted about 500 yards down the road to the place where the support of the advance guard is supposed to be halted.

The Director: Before proceeding further with the problem it is necessary for us to decide upon the formation of the advance guard at this time. Just what do you think the formation would be, Captain James?

Captain James: The support would be right here in column of squads on the road. It would consist of the company (less one platoon and two connecting files). About 400 yards farther down the road would be the advance party, consisting of one platoon, from which there would be a point of one squad, about 150 yards farther to the front.

(Note: Captain James would include in his dispositions any flank patrols that would be out at this time.)

The Director: I think we can all agree on those dispositions and proceed to the solution of our problem based on them. Now, let each member of the class consider himself to be Captain E, commanding the advance guard. You have attended the assembly of officers at the head of the main body and received the major's orders. You have now returned to the company and are ready to go ahead with your part of the operation, that of posting the outpost. Just how are you going about the task that has been allotted to you? Captain Hodges, tell us what you would do.

Captain Hodges: I would first send a runner to Lieutenant M, commanding the advance party, telling him to report to me here. While waiting for Lieutenant M to come back, I would size up the situation and decide upon my tactical dispositions.

The Director: What would be your primary dispositions?

Captain Hodges: I would have a line of supports on which I would employ one platoon and one section and a reserve consisting of the rest of the company.

The Director: That would be a reasonable disposition. How many supports would you have, Captain Harvey?

Captain Harvey: I would have three supports—one on the main road and one at a suitable interval on each side of the road. There would be a section in each support.

The Director: Lieutenant Ralston, do you agree with that disposition?

Lieutenant Ralston: No, sir. It seems to me that two supports would meet the situation better. In the first place, this main road is the route on which any considerable force of the enemy must advance after dark, and I would want to cover it with a relatively strong force. I would put one support on the road and have it extend over to the right for a sufficient distance to cover the front and the immediate right flank. It would extend its front to the left of the main road. I would have support No. 2 off to the left to cover that flank.

(Note: The terrain may be such as to cause a reversal of this disposition. The idea is that the support on the flank should be posted so as to cover the most exposed flank.)

Support No. 1 would consist of one platoon and No. 2 of one section.

The Director: Explain why you extend the front of your support No. 1 to the left of the road?

Lieutenant Ralston: So that the boundary line between supports will not fall on the road. One man must be made responsible for the covering of this main road, and if I make it the boundary line between supports, even if I include it in the front of one of them, it will be more or less neglected. But, if I extend the front of support No. 1 beyond the road to the left, I am reasonably sure that it will be taken care of properly.

The Director: That is the point I wanted to bring out. I hope that all the members of the class see it. We have now to decide upon the troops to be designated for each

of the supports. What would be your decision as to that, Lieutenant Wallace?

Lieutenant Wallace: I would have the first platoon, which now forms the advance party, form support No. 1 which will be posted on this main road and cover the front from that —— (*indicating right boundary of front*) to that —— (*indicating left boundary of front*). The first section of the second platoon would form support No. 2. It would be posted at —— and cover the front from —— to ——.

The Director: That seems to be a reasonable disposition. Where would you have your reserve?

Lieutenant Ralston: I would have it posted at ——.

The Director: There is one point on which we have not yet touched. That is the matter of the covering of the posting of the outguards. What would you do about that, Captain Hastings?

Captain Hastings: I would let each support cover the posting of its own outguards. I believe they can do it better and more efficiently than any detachment that may be made from the rest of the company for the purpose.

SOLUTION

The Director: Let us now assume that Lieutenant M has arrived and you are all ready to issue your orders. Just how would you go about it, Lieutenant Williams?

Lieutenant Williams: I would assemble the officers, platoon sergeant and section leaders in front of the company. I would give the command: 1. *Company,* 2. ATTENTION, and follow with AT EASE. I would then say: "Let me have your attention." I would issue my orders as follows:

> Small detachments of the enemy have been reported at (*h*) and (*i*) (*indicating where the places are*). Our 3d Battalion is halted for the night at (*k*). Our regiment (less 2d and 3d Battalions) is halted for the night at (*l*). Our battalion halts for the night at (*m*) (*point out location*). March conditions have ceased.
>
> This company furnishes the outpost along the (*n*) (*point out general line*).
>
> Lieutenant M, with the first platoon, will form support No. 1, which, posted on the road at ——, will cover the front from —— (*inclusive*) to —— (*inclusive*).
>
> Lieutenant N, with the second platoon (*less one section*), will form support No. 2, which, posted at ——, will cover the front from —— (*exclusive*) to —— (*inclusive*).
>
> The remainder of the company will be posted at —— as reserve.
>
> The rolling kitchen will be with the reserve. Meals will be cooked and distributed to the supports.
>
> Messages to the reserve.

PROCEDURE

The Director: You will note that the order given by Lieutenant Williams follows the form of the five-paragraph order and covers all essentials. Are there any questions?

Lieutenant Hunt: It seems to me that we are imposing on the first platoon. They have been on advance party duty all day, and now we propose to keep them on front-line observation duty all night.

The Director: If the platoon had had any serious contact with the enemy during the day, it would have been proper to bring it back to the reserve, but they have just been marching along on the road. They have had practically no flank patrolling to do and are in just as good shape as the rest of the company. I can see no reason for not detailing them for support duty tonight. The platoon is out in front, near the place where it is to be posted. Any other questions? There appear to be none. Now I want each member of the class to write out, on his pad, this order of Captain E. Try to get the proper form and wording for each sentence in it and cover the points brought out in Lieutenant Williams' solution.

The necessary time is allowed for this. The solutions are collected and redistributed. One or more members of the class may be called upon to read the solution in his possession and comment upon the wording and form of the order.

The Director will then distribute slips of paper containing the order of Captain E as given. This is done in order that each member of the class may compare his work with it and that the situations following and their solution may be based on it.

Problem No. 2 *Card No. 1*

Director's Key

1. Make copies of the problem and Situation No. 1, also the solution to Situation No. 1, a copy for each member of the class.
2. Conduct the class to the point on the road where the battalion is halted and where it will bivouac for the night.
3. Make short talk on the protection of troops in bivouac and the formation and duties of outposts: (*a*) How a command protects itself at a halt; (*b*) Duties of outposts; (*c*) Subdivision of outposts; (*d*) Formation of outposts (illustrate by reference to outstretched hand), main body, reserve, supports, outguards, sentinels.
4. Distribute sheets bearing problem and Situation No. 1.
5. Read problem aloud and question members of the class on the tactical situation: mission of battalion, why halt, estimation of the situation, elements of field order, compare with battalion commander's order, why Company E for outpost.
6. Conduct class to point where support of advance guard is supposed to be.
7. Discuss formation of advance guard. Each man now consider himself as being Captain E.
8. Discuss formation of outpost: Primary dispositions, number of supports; why support on main road; boundaries of support front; location of supports; location of reserves; covering posting of outguards.
9. Final solution of problem: Preliminaries; order of Captain E; five-paragraph order; why first platoon forms one support.
10. Have members of class write out order. Collect solutions and redistribute them. Distribute copies of Captain E's order. Read and discuss solutions.

PROCEDURE

The class is now conducted to the point on the road where the advance party is supposed to be halted.

The Director: We are now at the point where the first platoon, which is the advance party of the advance guard, is halted. Lieutenant M has joined his platoon and is ready to proceed with the execution of the task alloted to him.

THE PROBLEM

Situation No. 2:

You, Lieutenant M, have rejoined your platoon here. The platoon has been designated to form support No. 1. The captain's order was as follows:

> Lieutenant M, with the first platoon, will form support No. 1, which, posted on the road at ——, will cover the front from —— (*inclusive*) to —— (*inclusive*).

Required:

Carry out your mission.

PROCEDURE

The Director reads Situation No. 2 aloud and explains that each member of the class should now consider himself to be Lieutenant M, commanding the first platoon, designated to form support No. 1.

The Director: Lieutenant Hunt, how would you go about carrying out your mission?

Lieutenant Hunt: I would first size up the situation and arrive at a decision as to what I am going to do and how I am going to do it.

The Director: How is security provided for during the time that the outpost is being posted?

Lieutenant Hunt: By sending out some troops to cover the posting of the outguards. This is sometimes provided for by the outpost commander detailing a unit for the purpose of covering all the outguards and then withdrawing to the reserve. The alternative is to have each support cover the posting of its own outguards. The latter system has been adopted in this problem, and

we will have to provide our own covering troops.

The Director: What troops would you detail for this duty?

Lieutenant Hunt: I would send out the first section (less the squad on duty as point) under the section commander. I would have the point withdraw to the support as soon as the covering troops have taken over the duty of security.

The Director: That seems to be a reasonable solution. Into what parts is an outpost support divided, Lieutenant Barry?

Lieutenant Barry: Into the support proper and the outguards. From the outguards sentinels are posted.

The Director: What are the duties assigned to each of the component parts of the support?

Lieutenant Barry: The support proper is the fighting element of the outpost. It is posted on the line where the outpost will make its stand. The outguards with their sentinels form the observation element. They are posted on the line of observation ——.

Captain Hall: That may be the usual line up for the support. But, is it not a fact that sometimes the outguards are posted on the fighting line?

The Director: Yes. It may be that the line of observation is also the best fighting line for the supports. In that case we say "the line of observation and the line of resistance coincide"—that is, they are the same. When we issue the order for the support we make provision for that by stating: "In case of attack the outguards will be supported." This means that the outguards will hold their positions and the supports will come up to them in case the enemy attacks.

Captain Hall: In that case, why not place the support right up on the line of resistance in the first place?

The Director: Lieutenant Baker, can you answer Captain Hall's question?

Lieutenant Baker: I believe I can give a reason for it. If we should place the support right up on the line of outguards we would commit it to one position, and in case of attack it would be difficult to move it to meet the enemy's main effort. If we keep it at a central point to the rear of the line, we can readily move it to any point where it may be most needed.

The Director: You are right. We do not want to commit our support to action until we find out the direction of the enemy's attack. The shifting of troops along a front line is a most difficult and hazardous operation. I hope you see the point, Captain Hall.

Captain Hall: Yes, sir. I do.

(Note: In the preparation of the terrain exercise and fitting the problem to the ground, the Director should decide upon the location of the line of observation and the line of resistance and bring out the points indicated above. He should decide upon the location of the outguards and their strength.)

The Director: How many outguards do you think are required on the front assigned to the support, Captain Jones?

Captain Jones: I should have one on the main road leading towards the enemy; another on the right of the road in the vicinity of —— (*indicating*); and another to the left of the road in the vicinity of —— (*indicating*). I think this would be sufficient for observation purposes.

The Director: Upon what main elements do you base the strength of these outguards?

Captain Jones: On the number of sentinel posts they must maintain. If a double sentinel post is required, a sentry squad should be allotted to the outguard. If only a single sentinel is required, the outguard should be a cossack post.

The Director: That is exactly the point I wanted to bring out. We will take it up in detail later on in the problem. Let us assume that three outguards will be required to cover the front. No. 1, on the right of the road, is to be a sentry squad; No. 2, posted on the road, is also to be a sentry squad; and No. 3, posted on the left of the road, is to be a cossack post. How many men in a cossack post, Captain Hodges?

Captain Hodges: A noncommissioned officer and three men. This number furnishes a commander for the post and three reliefs for a single sentinel post.

The Director: That is correct. Are there any questions on the points that we have been discussing?

(Note: The Director should take advantage of every opportunity to get members of the class to ask questions. It is by this means that we are able to bring out the tactical points of the problems and make them clear. If no questions are asked, it is natural to assume that the members of the class understand everything that is under discussion, whereas many of them may not understand at all. The more questions a Director can get out of a class the more effective will the training be.)

SOLUTION

The Director: We are now ready to issue Lieutenant M's order for the establishment of support No. 1. Captain Hodges, please tell us the first and second paragraphs of the order.

Captain Hodges: I would tell the men about where the enemy is and all I know about our own troops and then tell them what we are going to do.

The Director: All right. Now, assume that you are Lieutenant M, and the rest of us here are the members of your platoon. Put all you have said in the form of an order to us.

Captain Hodges: You want me to do everything I would do if I were Lieutenant M?

The Director: Exactly.

Captain Hodges: I would give the command: 1. *Platoon,* 2. ATTENTION, and order CLOSE UP. I assume that the men are in columns of files, one on each side of the road. I then give the command AT EASE, and caution the men, "Let me have your attention." I direct, "Noncommissioned officers assemble here." I then give the order for the establishment of the support as follows:

> Small detachments of the enemy have been reported at (*h*) and (*i*). Our 3d Battalion is halted for the night at (*k*). Our regiment (less the 2d and 3d Battalions) is halted for the night at (*l*). Our battalion halts for the night at (*m*). Our company furnishes the outpost with the second platoon (less one section) as support No. 2 at —— and the remainder of the company as reserve at ——. March conditions have ceased.
>
> This platoon forms support No. 1.

The Director: Captain Harvey, what does the third paragraph of the order deal with?

Captain Harvey: With the disposition of troops.

The Director: Will you state what you think should go into it?

Captain Harvey: Yes, sir. I think it should be as follows:

> Sergeant X, with the first section (less one squad), will cover the posting of the outguards, and on completion of that duty withdraw to the support.
>
> Corporal W, with the fourth squad, will form outguard No. 1, which, posted in the vicinity of ——, will cover the front from —— (*inclusive*) to —— (*inclusive*).
>
> Corporal V, with the fifth squad, will form outguard No. 2, which, posted on the main road at ——, will cover the front from —— (*exclusive*) to —— (*exclusive*).
>
> Corporal T, with the front rank of the sixth squad, will form outguard No. 3, which, posted at ——, will cover the front from —— (*inclusive*) to —— (*inclusive*). Communication with outguard No. 1 of support No. 2 will be maintained.
>
> The remainder of the platoon will be posted at —— as support.
>
> In case of attack the outguards will be supported.

The Director: Lieutenant Ralston, what elements does the rest of the order contain?

Lieutenant Ralston: The next paragraph contains the administrative arrangements. In the platoon the main thing is the messing of the men. They will all want to know about the arrangements for meals. I would say:

> Meals will be distributed to the outguards by details from the support.

The next item is the designation of the place where to send messages.

> Message to the support.

I would then direct: MOVE OUT.

PROCEDURE

The Director: I believe we have gone over and discussed the salient features of the problem. Now I desire each member of the class to write out Lieutenant M's order on his pad. Try to get it in the proper form and use as far as possible the wording as stated by Captain Hodges, Captain Harvey and Lieutenant Ralston.

When the written orders have been completed they are disposed of in the same manner as indicated under situation No. 1.

Problem No. 2 *Card No. 2*

Director's Key

1. Conduct class to point on road where advance party is halted.
2. Hand out Situation No. 2. Read and explain that each member of the class is now supposed to be Lieutenant M.
3. Security while outpost troops are getting into position.
4. Main elements of support line—observation, resistance. When they coincide. Location of support.
5. Number of outguards required. Basis of strength of outguards; sentinel posts; sentry squads; cossack posts.
6. Details of Lieutenant M's order. Information of enemy and own troops. Plan of commander. Disposition of troops: Three outguards, location, strength, front each is to cover, location of support, action in case of attack. Meals. Messages.
7. Have class write order. Collect solutions and redistribute them. Read and discuss solutions.

(*To be continued*)

The R. O. T. C.

It is the hearty and unanimous opinion of the trustees and faculty of this college that the military work is of great value and importance. It teaches patriotism of a high quality which cannot be induced in any other way. . . . The influence of the army officers on the students is wholesome in every respect. . . . In my judgment every feature of the Reserve Officers' Training Corps course has a tendency to increase loyalty and raise the standard of the students of the college.—*President Thomas, Pennsylvania State College.*

Book Reviews

Battlefields of the World War, by Douglas Wilson Johnson. New York: Oxford University Press. Text and maps. Cloth bound, 632 pages. Price, $7 complete.

This is a study of the military geography of the western and southern fronts, interwoven with a brisk narrative of the principal battles fought on them. The arrangement is most admirable and systematic. The eight areas or battlefields include five in France, two in Italy and one in the Balkans. First is a description of the battlefield from a geographical and topographical standpoint, which is in turn followed by an account of the military operations, their difficulties and their results.

The author recognizes that it is the doughboy who, despite the multiplicity of weapons and utilities developed during the war, is the backbone of the Army and all military effort, and that whatever affects his movements and his supply is bound to influence the outcome of operations.

The battlefield in which the American soldier is particularly interested is described in an illuminating fashion. The reader will find much in the description of the parts of the battlefield of the Meuse-Argonne to interest him. His memories will fill in the details.

Soldiers of all times have realized the influence of terrain on the progress and outcome of military operations, and this book will be found to be a wonderful help to the student of the conflicts of the World War.

The maps are photographic reproductions of the French 1:200,000 sheets. It would seem that the value of the work would have been greatly enhanced by more attention to detail in the preparation of really excellent maps to accompany the text.

The Battle of Booby's Bluffs, by Major Single List. Washington: The U. S. Infantry Association. Cloth, 1 vo.; 134 pages and map. Price, 75 cents.

Based frankly upon "The Defense of Duffer's Drift," this book deals with the experiences of a major commanding an assault battalion of a regiment attacking as part of a larger force. The action is limited to the events of one morning. Efficiency is acquired through lessons taught in a series of six vivid and connected dreams.

Major "Single List" portrays himself in the beginning as an inefficient and conceited officer who is further handicapped by having attended certain service schools at which he proved incapable of acquiring sound tactical instruction. The first time under fire his battalion fails—five consecutive times—in its attack mission. Major List's vision of each attempt covers the same situation and teaches him certain tactical lessons which are summarized in twenty-eight pointed paragraphs appearing serially at the end of the various chapters. The sixth and successful effort is designated "An Approved Solution." By bitter experience the major has acquired ability to handle his battalion and certain attached auxiliary forces in this problem. He has also learned the application of some essential principles of minor tactics.

The tactical situations are instructive and clearly drawn. Responsibilities inherent in the office of an infantry battalion commander, before and during

such an action, are illustrated with unmistakable emphasis. A technical error appears in the references to riflemen following an artillery barrage at 60 yards—100 yards is the minimum distance practicable. A second error in technique appears in the manner in which Major List uses his four accompanying guns, which are not utilized as such but as an accompanying battery.

The last chapter tells how Major List "enjoyed the reputation of being an officer who said what he thought but who always got results." Consistent with this character and also with certain other qualities indicating impatience with military authority, he criticises the plan of his division commander, argues with his colonel concerning dispositions within the regimental zone of advance, considers only the action of his own battalion in the engagement, exhibits no idea of teamwork with the other battalions and little interest in the mission of his regiment as a whole.

The scheme of action and the thought upon which this book is based deserve commendation. But to be of full instructional interest and value, the military units referred to should conform to the 1921 Tables of Organization. A machine-gun company is now an integral part of an infantry battalion. Essential communications and intelligence personnel are provided for the battalion command post. The howitzer company modifies the situation with respect to the light mortars and one-pounders. Thus the present tables eliminate a number of Major List's troubles in coordination and control. Further, the battalion commander should, in the end, develop into a competent and loyal member of the regimental team.

R. E. K.

The Engineer Service in War. Published by The Society of Military Engineers, Washington, 1922. Booklet, 36 pages. Price, 25 cents.

In furtherance of the objects of the Society of American Military Engineers, relating to the dissemination of information on military engineering, the society has arranged for the distribution of a pamphlet on "The Engineer Service in War"—A Manual of Instruction.

This pamphlet was prepared in the office of the Chief of Engineers, U. S. Army, and publication was authorized by the Secretary of War as a tentative manual on "The Employment of Engineers in War." As originally printed, it was not available for general distribution, but because of the great importance and value of the contents of this manual to officers and units of the National Guard and the Organized Reserves, the Society of American Military Engineers arranged for a reprint to be sold at a price barely sufficient to cover the costs of printing and distribution. The manual numbers thirty-five pages and comprises four sections:

Section I describes the duties of the Corps of Engineers in the theater of operations and discusses the fundamental principles of command and the classification, assignment and allowance of engineer troops.

Section II relates to the duties of the chief engineer of an expeditionary force, and the duties of engineers of the communications zone and its subordinate sections, as well as those of the armies, corps and divisions.

Section III describes briefly the organization and duties of the various types of engineer regiments and auxiliary engineer battalions.

Section IV relates to special engineer troops and discusses the organization of such units as topographical battalions, railway engineers, lumber engineers, shop and depot engineer companies, bridge trains and water tank trains.

Three brief appendices include a diagram showing the relations of unit engineers to the high command and staff, descriptive matter relating to the four methods of map reproduction used by the Engineer Service in the field, and a brief statement as to the railroad functions of the Transportation Service and the Corps of Engineers.

The pamphlet covers its subject concisely but comprehensively. It deserves a place in the library of everyone interested in military art and is of exceptional value to every officer of the reserve forces. It would serve admirably as a textbook for classes of instruction.

Orders for any number of copies placed with the secretary of the society can be filled at once. The attached card, duly filled out and mailed to the secretary, will receive his prompt attention.

President League of Nations

When Hanford MacNider, the new commander of the American Legion, reached his home town, Mason City, Iowa, several days after he was elected, he was met by most of the inhabitants of the town and the entire surrounding country. A band played, people yelled and cheered, he was placed at the head of a long parade and escorted to his home. That evening he was the honored guest at a reception which, he says, he appreciated more than any other affair that has been or ever will be held for him because it came from the home folks.

A Danish woman, resident of Mason City and an admirer of the commander, observed, "Ain't it grand to have the president of the League of Nations right here?"

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